Test Specifications Fuel Injection Pumps ① and Governors

4

WPP 001/4 CAT 10,5 b

1. Edition

PES 6 P 80 A 720 LS 425 Komb.-Nr. 9 400 087 323

ROV 300-1000 PA 577-2

supersedes-

company: Caterpillar

91,9 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1.90-2.10) mm (from BDC); cy1. 1; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
990	12,0+0,1	9,7-9,8	0,25(0,4)			
300	6,8-7,0	0,9-1,6	0,2 (0,35)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection of control	ev/min Control od travel	Control rod (16 travel mm rev/min (26 3	of control	rated sp rev/min 5	Control rod travel	Lower rated Degree of defisction of control lever 7	speed rev/min 8	Control rod travel mm 3		mm
ca. 69		15,2-17,8 1020-1030 1090-1120 0-1,0	-	-	-	ca. 16 220-37 30	300 490	min.11,0 6,4-6,6 -550=2,0	400 500	0,5-2,0 2,7-3,1 3,5-4,2 6,1-6,6 8,5

Torque control travel a = 0,70 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil terr		limitation intermediate speed	high idle s	very characteristics (5a)	Starting Idle switchin		Torque travei	-control 5 Control rod travel
rev/min	cm³/1000 strokes	rev/min (48)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
990	97,0-98,0 (95,5-99,5)	1020-1030*	500 700	101,0-103,0 (100,0-104,0 103,0-105,0 (102,0-106,0		152,0-172,0	990 500 700 850	12,0+0, 12,7+0, 12,5+0, 12,2+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

BOSCH

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Test Specifications Fuel Injection Pumps ① and Governors

1. Edition

PES 4 P 80 A 720 LS 440 Komb.-Nr. 9 400 U87 327

RQV 350-950 PA 609-6

supersedes -

company: Caterpillar 3304-NA

WPP 001/4 CAT 7.0 a 1

65,5 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

,95-2,05 90-2 10 mm (from BDC) Port closing at prestroke Spring pre-tensioning (torque-control valve) Control rod travel Control rod **Fuel delivery** Difference **Fuel delivery** Rotational speed cm³/ cm³/100 strokes 100 strokes cm³/100 strokes rev/min mm 6 11,7+0,1 0,25(0,4 950 9,1-9,2 6,7-6,9 350 0.9-1.4 0,2(0,35)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s Degree of deflection of control	rev/min Control rod travel	Control rod ta	Intermediate Degree of deflection of control	rated sp	Control rod travel	Lower rated Degree of deflection of control	speed	Control rod travel		leeve travel
lever		rev/min (2a)	lever	rev/min 5	mm (4)	lever 7	rev/min 8	mm (3)	rev/min	mm 11
max.	1010	15,2-17,8	-	-	-	ca. 19	250	min.11,0		0,5-2,0
ca. 66	10,7 4,0 1150	980-990 1055-1085 0-1,0				300-400	1	6,3-6,5 600=2,0	400 500 800 1010	2,7-3,1 3,5-4,2 6,1-6,6 8,5
		× 65				39				

Torque control travel a = (1) f(1) mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2 rev/min cm³/1000 strokes		Rotational-speed (2b) limitation intermediate speed rev/min	ermediate speed		idle switchir		Torque- travel	Control cod travel mm
1	2	3	4	5	6	7	8	9
950	90,5-91,5 (88,5-93,5)	980-990*	500 700	95,5-97,5 (93,5-99,5) 100,0-102,0 (98,0-104,0)	100	152,0-172,0	950 500 700 800	11,7+0,1 12,5+0,1 12,4+0,2 12,0+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 CAT 7,0 a 240

1. Edition

PES 4 P 80 A 720 LS 440 Komb.-Nr. 9 400 087 328 ROV 350-1000 PA 613-2

company.Caterpillar 3304-NA

59.0 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
1,95-2,05
(1,90-2,10) mm mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,6+0,1	9,0-9,1	0,25(0,4)			
350	6,7-6,9	0,9-1,3	0,2(0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection Control ro	ev/min Control od travel	mw.	(B) (G)		rev/min	Control rod travel mm 4	Lower rated Degree of deflection of contref lever	rev/min	Control rod travel	rev/min	
ca. 70 1	1000 10,6 4,0 1180	15,2-17 1030-10- 1100-11: 0-1,0	40 30	•	5	-	ca. 21 300-400 38	250 350 550-	min.11,0 6,5-6,7 610=2,0	325 400 500 800 1010	0,5-2,0 2,7-3,1 3,5-4,2 6,1-6,6 8,5

Torque control travel a = (1)

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2b) limitation intermediate speed			Starting Idle switching	<u> </u>	Torque- travel	control (5)
rev/min 1	cm³/1000 strokes	rev/min 4a 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strakes 7	rev/min 8	travel mm 9
1000	90,0-91,0 (88,0-93,0)	1030-1040*	500 700	90,0-92,0 (87,5-94,5) 95,0-97,0 (92,5-99,5)	100	152,0-172,0	1000 500 700 850	11,6+0 12,1+0 12,0+0 11,7+0

Checking values in brackets

* 1 mm less control rod travel than col. 2

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WPP 001/4 CAT 7,0 a 3

1. Edition

PES 4 P 80 A 720 LS 440 Komb.-Nr. 9 400 087 313

RQV 375-1100 PA 732

supersades _

company: Caterpillar and angine: 3304-NA

73,5 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(1.90-2.10)	mm (from BDC)			
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	13,0+0,1	11,2-11,3	0,2(0,35)			
375	6,7-6,9	1,0-1,7	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed rev/min	Control rod	Intermediate	e rated sp	eed Control rod	Lower rated	speed	Sliding sleeve travel		
deflection of control lever	Control rod travel	mm C	Degree of deflection of control lever	rev/min	travel (4)	deflection of control lever	rev/min	Control rod travel mm (3)	rev/min	mm (1)
1	2	3	4	5	6	7	8	9	10	11
max.	1130	15,2-17,8	-	-	-	ca. 19	250	min.10,0		0,7-1,6
ca. 68	12,1 4,0 1350	1130-1140 1230-1260 0-1,0				350-450		5,9-6,1 540=2,0	525	2,6-3,1 3,7-4,3 5,0-5,5 8,5
						39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 5e	Starting Idle switching		Torque-control 5 travel Control rod	
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	В	9
1100	112,0-113,0 (110,5-114,5)		700	107,5-110,5 (106,5-111,5)	100	152,0-172,0	•	8

Checking values in brackets

* 1 mm less control rod travel than col. 2

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En

PES 6 P 80 A 720 LS 456 Komb.-Nr. 9 400 087 321

RQV 350-1000 PA 755

supersedes

company: Caterpillar

engine:

3306 T

Festcil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at prestroke	1,65-1,75 (1,60-1,80)	mm (from BDC)	; cy1.	1;	RW =	9,0-12,0 m	m

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-fensioning (torque-control valve) mm 6
1000	13,1+0,1	11,9-12,0	0,25(0,4)			
350	6,7-6,9	1,0-1,7	0,2 (0,35			
		1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed		Lower rated	speed	2		Sliding s	leeve travel
deflection	rev/min Control	Control rod travel	◉	Degree of deflection		Contr		Degree of deflection		Control ro	d		0
	rod travel mm	mm rev/min	(29)	of control lever	rev/min	mm	•	of control lever	rev/min	mm	3	rev/min	mm
1	2	3		4	5	6		7	8	9		10	11
max.	1010	15,2-17	7,8	•	-		•	ca. 17	250	min.1			0,5-2,0
ca. 70		1030-104 1110-114							350 510-5	15,9-6, 570 = 2	,0	500	2,7-3,1 3,5-4,2
	1230	0 - 1,0						300-400				800 1010	6,1-6,6 8,6
								③					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil terr	stop	limitation intermediate speed	high idle s	very characteristics (5e) speed (56)	Starting idle switchir	•	Tarque- trevei	Control rod	
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm	
1	2	3	4	5	6	7	8	9	
LDA 1000	0,45 bar 118,5-119,5 (118,0-120,0		LDA 800	0,45 bar 127,5-129,5 (125,5-131,5		152,0-172,0	600	14,4+0,	
LDA 600	0,45 bar 131,0-133,0 (129,0-135,0)		LDA 600	0 bar 108,5-110,5 (106,5-112,5					

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

D. Adjustment Test for Manifold Pressure Compensator

CAT 10,5 d - 2 -

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 P LS 456 + RQV PA 755	0,45	0 0,27	14,4-14,5 13,0-13,1 13,8-13,9

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

2

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 SKO 13.7 a

1. Edition

RO 325/1000 PA 734 PE 6 P 120 A 320 RS 482 Komb.-Nr. 0 401 846 504 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes company:

Skoda M 2

engine: 270.0 kW

Festoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Fuel delivery

cm3/100 strokes

24.6-24.8

1,7-2,3

A. Fuel Injection Pump Settings

Port closing at prestroke (2,15-2,35)Control rad

14.1+0.1

6,6-6,8

travel

Rotational speed

700

325

rev/min

mm (from BDC) Difference

100 strokes

0.5(0.8)

0,8 (1,2)

RW = 9.0 - 12.0 mm

Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm	cm ³ /100 strokes	mm
2	3	6
	<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider ck Control rod	Full-load s Setting po	•	•	cifications (4)	Idle spec	-		cifications 5	Torque (3
rev/min	travel mm 2	rev/min 3	rod travel mm 4	red travel mm 5	rev/min 6	rev/min 7	rod travel	rev/min 9	travel	rev/min 11	travel	
700	15,6-16,4	700	16,0		1045-1060 1115-1145 0-1,0	325	6,6	325	min.8,1 6,5-6,7 25=2,0	700 790	13,8-13, 14,8-14, 14,5-14, 14,0-14,	9

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics	Starting to	ruel delivery ed 6
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min	cm ³ /1000 strokes / mm
LDA 700	1,0 bar 246,0-248,0 (243,0-251,0)		LDA 1000	1,0 bar 240,0-244,0 (236,0-248,0)		

Checking values in brackets

10.85

D. Adjustment Test for Manifold Pressure Compensator SKO 13,7 a

Testat n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 482 + RQPA 734	1,0	0 0,76 0,65	14,1-14,2 13,0-13,1 13,6-13,7 13,1-13,4

Notes

(1) when n =

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

and Governors

WPP 001/4 VOL 7,1 a

1. Edition

PE 6 P 110 A 320 RS 483 Komb.-Nr. 0 401 846 505 ROV 250-1200 PA 499-1

supersedes companyolvo engine: TD 71 F 162,0 kW

Testoil-iSO 4113

All test specifications are valid for Booch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

pre-tensioning i-control valve)
4-2,6 2-2,9)
1

250 5,1-5,3 1,6-2,0 0,3(0,6)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed			Intermediate	rated sp	eed		Lower rated	speed	•	Slidings	leeve travel
deflection	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	9	Degree of deflection of control lever	rev/min 5	Control rod travel mm (①	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	0
max.	1200	15,2-1	7,8	-	-	-		ca. 9		min.6,6		
ca. 62	11,7 4,0 1500	1240-1 1380-1 0-1	410					300-410		5,1-5,3		
								3				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter rev/min	rod stop temp. 40°C (104°F) (2) limitation intermediate speed (50)		idle switchir	•	Torque- travel rev/min	Control 5 Control rod travel		
LDA 700	2 0,9 bar 137,0-139,0 (134,0-142,0)	3	LDA 700	5 0 bar 71,0-73,0 (68,0-76,0)	100	7 160,0-190,0 160,0-190,0)	-	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

D. Adjustment Test for Manifold Pressure Compensator VOL 7,1 a

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference				
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .				
PE 6 PRS 483 + RQVPA 499-1	0,9	0 0,60 0,11	12,7-12,8 8,9-9,0 12,2-12,3 9,2-9,4				

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 CAT 7,0 b 1

1. Edition

PES 4 P 80 A 720 LS 852

RQV 350-1000 PA 609-5

supersedes _

Komb.-Nr. 9 400 087 326

company: Caterpillar and an angine: 3304 T

78,7 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1.60-1.80) mm (from BDC); cy1. 1; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,2+0,1	10,7-10,8	0,25(0,35			
350	6,7-6,9	1,0-1,7	0,2 (0,3)			
		A				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed		Lower rated	speed			Sliding sleeve travel		
deflection	rev/min Control rod travel	Control rod travel	(10)	Degree of deffection of control		Control rod travel		Degree of deflection of control		Control ro travel	d		0	
lever		rev/min	29		rev/min	mm (4	lever	rev/min	mm	(3)	rev/min	mm	
1	2	3		4	5	6		7	8	9		10	11	
max.	1010	15,2-17	,8	-	-	-		ca.17		min.11 6,3-6,			0,5-2,0 2,7-3,1	
ca. 68	11,2 4,0 1200	1110-114	10					320-420		90= 2,		500	3,5-4,2 6,1-6,6 8,5	
								39						

Torque control travel a = 1.0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten rev/min	d stop np 40°C (104°F) 2	Rotational-speed ②b imitation intermediate speed rev/min ④	high idle s	rery characteristics (5e) peed (50) cm ³ /1000 strokes	idle switchir		Torque travel	Control (5) Control rod travel mm
1	2	3	4	5	6	7	8	9
1000	106,5-107,5 (105,0-109,0		500 700	109,0-112,0 (107,0-113,0 113,0-115,0 (111,0-117,0)	RW = 17,6-18,6 mm	500 700	12,2+0,1 13,2+0,1 13,1+0,2 12,7+0,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 SSC 14,0 a 1

1. Edition

PE 12 P 100 A 520/6 RS 3103-1

RQV 375-1000 PA 639-2

supersedes SSCM

Komb.-Nr. 0 401 830 711

company: V 12.520 AN

220,0 kW

1-8-5-10-3-7-6-11-2-9-4-12 0-15-60-75-120-135-180-195-240-255-300-315 ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 atrokes 4	mm 2	cm³/100 strokes	mm 6
1000	11,5+0,1	9,2-9,4	0,35(0,6)			
375	7,6-7,8	1,0-1,4	0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in g

B. Governor Settings

Upper rated :	speed		Intermediate	rated sp	eed	Lower rated	speed		Stiding	leeve travei
Degree of deflection of control lever	rod travel	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	0
max.	1075	15,2-17,8	-	•	-	ca. 19		min.9,2 7,6-7,8	350 450	1,1-1,6 3,3-3,7
ca. 65		1040-1050 1120-1150 0-1,0				375-47				5,2-5,6 7,7
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten	d stop np. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed	Fuel delin high idle : rev/min	, we	idle switchli		travel	Control rod travel
1	2	3	4	5	6	7	rev/min 8	mm 9
1000	92,0-94,0 (90,0-96,0)	1040-1050*	ı	-	100	230,0-250,0 (226,0-254,0		-

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

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Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 SSC 21.0 b 1

2. Edition

PE 12 P 120 A 520 RS 3128

ROV 400-750 PA 708

supersedes 5.85

Komb.-Nr. 0 401 840 721

company: SSCM

1- 8- 5-10- 3 - 7 - 6 - 11- 2 - 9 - 4 - 12

V 12.520 S 25

0-15-60-75-120-135-180-195-240-255-300-315 ± 0,5° (± 0,75°) engine:

441 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

RW = 9.0 - 12.0 mm

		2,75-2,95)		••••	750 1111	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
700	14,3+0,	22,9-23,1	0,5(0,9)			
400	6,9-7,	2,0-2,6	0,8(1,2)			
		<u> </u>				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod travel	1	Full-load s Setting po rev/min 3	•	•	rev/min	Idle sper Setting p rev/min 7	Control rod travel		cifications 5 Control rod travel mm	rev/min	Control rod 3
•	-		•	-	13,3 4,0 900	750-755 788- 8 01 0-1,0	400	7,0	100 400	min.8,5 6,9-7,1	-	-
on flyweig	ontrol travel				mm	•	ed regula	ition: Af	50-75!	5 min ⁻¹	<u> </u>	t mm less contro rod trave

C. Settings for Fuel Injection Pump with Fitted Governor

	letivery on control tever np. 40°C (104°F)	Control rod stop (3a)	Fuel delivery characteristics			Starting f	uel delivery d I Control
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-100(_strokes 5	- 1	rev/min 6	red travel cm ³ /1000 strokes / mm 7
700	229,0-231,0 (226,0-234,0)	-	-	•		100	170,0-190,0 (166,0-194,0)

Checking values in brackets

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 ROL 12,2 d

2. Edition

PE 6 P 120 A 320 RS 3129 RQV 250-975 PA 709 1-4-2-6-3-5 ie 60° ± 0.5° (± 0.75°) superseded 85
Rolls Royce
company: Eagle III
engine: 204 kW

Values only apply to test nozzle-and-holder assembly Komb.-Nr. 0 401 846 793 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings
Port opening at prestroke 5,7-5,8

Mark for end of pump delivery 7,5° before end of pump delivery cyl.1.

		(5,65-5,85	Jum (stom BDG)	KW=9,U-1	2,0 mm	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery - cm ² /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) .nm 6
900	12,7+0,	20,6-20,8	0,5(0,9)			
250	5,6-5,8	1,7-2,3	0,8(1,2)			
						[

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	e rated sp	eed	Lower rated	speed		Sliding sleeve travel		
deflection of control	rev/min Control rod travel	Control rod travel	of control		Control rod travel	Degree of deflection of control		Control rod travel			
fever 1	mm 2	rev/min (28	lever 4	rev/min 5	mm (4)	lever	rev/min 8	mm (3) 9	rev/min 10	mm 11	
max.	1040	15,2-17,8	-	-	-	ca. 16	100	min.7,1	_	1,1-1,2	
ca. 66	11,7 4,0	1015-102! 1105-113!					250	5,6-5,8		2,1-2,6 3,2-3,5 8,3	
	1250	0-1,0				355-415					
						3					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np. 40°C (104°F) 2	limitation intermediate speed	high idle s		idle switchin	ng point	travel	Control rod travel
rev/min	cm³/1000 strokes	rev/min 3	rgv/min 4	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm 9
900	206,0-208,0 (203,0-211,0)		500	188,0-194,0 (185,0-197,0		200,0-220,0 (196,0-224,0		-

Checking values in brackets

* 1 mm less control rod travel than col 2

05.85

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 10,0 r 1

1. Edition

En

PE 6 P 120 A 320 RS 3134 RQV 250-1100 PA 764 Komb.-Nr. 9 400 087 312 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes company:

Volvo TM 101 G

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Şettings

Port closing at pres	stroke	(2,55-2,75)	mm (from BDC)	; cy1	. 1; RW = 9,0-	12,0 mm
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
700	14,8+0,1	27,8-28,0	0,5(0,9)		·	
250	5,6-5,8	1,5-2,1	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed			Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	mm .	(s) (3)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3		mm
max.	1170	15,2-17,	,8	-	-	-	ca. 9	100	min.4,0		0,7-1,1
ca. 49	13,8 4,0 1375	1160-117 1265-129 0-1,0	95					250 230-	2,1-2,3 290=2,0	500 800 1100	2,9-3,2 5,0-5,3 7,7
							3 a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter				Starting Idle switchli		Torque- travei	control 5	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min		rav/min 8	travel mm 9
LDA 700	0,35 bar 278,0-280,0 (275,0-283,0		LDA 700	0 bar 259,0-261,0 (256,0-264,0)	100	240,0-260,0	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

BOSCH

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A15

D. Adjustment Test for Manifold Pressure Compensator VOL 10,0 r 1

- 2 -

Testatn =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 3134 + RQVPA 764	0,35	0 0,21 0,16	14,8-14,9 14,0-14,1 14,5-14,7 14,2-14,3

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 SCA 11,0 u 11

2. Edition

En

PE 6 P 120 A 720 RS 7001

RQ 200/1100 PA 713

Komb.-Nr. 0 402 646 819

supersedes 11.84 company: Scania

engine:

DS 11 25, 26

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 5,0-5,1 (4,95-5,15) m

mm (from BDC)

· ort ordoring at pred		(4,95-5,15 <i>)</i>				
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,7+0,1	16,1-16,3	0,6(0,9)			3,3 [±] 0,1
225	4,4-4,6	1,1-1,5	0,3(0,6)	1		(3,0-3,5)
						**

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkir PRG che rev/min 1	Control rod	Full-load Setting p rev/min 3	oint Control rod travel	_	cifications (4)	Idle spec Setting p rev/min 7	coint Control Fod travel		cifications Control rod travel mm	Torque of rev/min	Control rod (3)
8000 VH :			16,5	10,7 4,0 1400		5	4,5	225	min.5,9 4,4-4,6 340=2,0	-	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation: A1145-1160 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever pp 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	Control roll travel crm3/1000 strokes / mm
LDA 700	0,5 bar 161,0-163,0 (158,0-166,0)	-	LDA 1100 LDA	0,5 bar 163,0-171,0 (161,0-173,0) 0 bar	100	240,0-290,0 =20,0-21,0 mm RW
			500	120,0-124,0 (118,0-126,0)		

Checking values in brackets

10.85

D. Adjustment Test for Manifold Pressure Compensator

SCA 11,0 u 11

-2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 7001 +RQ PA 713	0,50	0 0,28 0, 17	11,7-11,8 10,3-10,4 11,4-11,5 10,5-10,7
		n	

Notes

(1) when n =

rev/min and gauge pressure

bar (" maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-1-400/117
- lest specifications approved by Scania on 17.5.1984
- firing sequence, engine : 1-5-3-6-2-4
- ** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 70 2,9 3,1 mm.

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 SCA 11.0 w 2

2. Edition

PE 6 P 120 A 720 RS 7007 y Komb.-Nr. 0 402 646 812 y

ROV 200-1000 PA 539-2

supersedes 7.85 Scania

Values only apply to test nozzle-and-holder assembly

DSC 1102

1 688 901 019 and fuel-injection test tubing 1 680 750 015

LKW 112

See page 2

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing difference between control-rod travel 8 mm and max. 1,85-2,55° camshaft

Port closing at pres	stroke (4,45-4,65)	mm (from BDC)		= RW 6.0 - 8.	0
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
700	16,0+0,1	22,4 - 22,6	0,7 (1,0)			3,3 <u>+</u> 0,1
225	4,4-4,6	1,4 - 1,8	0,3 (0,6)			(3,0 - 3,5)
	l					**

Adjust the fuel delivery from each outlet according to the values in ______.

** Due to smoothing of the sealing edge, the initial spring tension B. Governor Settings

				e rated sp					Sliding sleeve travel	
deflection	rev/min Control rod travel mm 2	Control rod travel mm rev/min 2	of control	rev/min 5	control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min 10	mm 11
max.	1040	15,2-17,8	-	-	-	ca. 10		min. 5,9 4,4-4,6		0,5-0,8 3,1-3,6
ca. 62		1040-1050 1175-1205 0-1,0					310-3	, , ,		5,1-5,4 7,9
						3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter rev/min	d stop np. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed rev/min (4a)	(3)		idie switchii		Torque- travel	Control 5 Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 700	0,9 bar 224,0-226,0 (221,0-229,0)	1040-1050 *	LDA 1000 LDA 500	0,9 bar 220,0-228,0 (218,0-230,0 0 bar 164,0-168,0 (162,0-170,0		240,0-290,0 = 20,0-21,0 mm RW		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

SCA 11,0 w 2

- 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 7007 y +RQVPA 539-2	0,90	0 0,41 . 0,29	16,0 - 16,1 11,8 - 11,9 14,0 - 14,1 12,4 - 12,6

Notes

(1) when n =

rev/min and gauge pressure = bar (- maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 18.8.1983
- Start of fuel delivery-engine: 22° before TDC at RW = 6,0-8,0 mm
- Firing sequence, engine : 1-5-3-6-2-4

WPP 001/4 MWM 14,4 b

TBD 234 V 8

1. Edition

MWM

supersedes

company:

engine:

PE 8 P 120 A 520/5 RS 7115 Komb.-Nr. 0 402 648 823

ROV 300-1150 PA 756

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

11-8-5-4-7-2-3-6 0-30-90-120-180-210-270-300 ° ± 0.5 ° (± 0.75 °) All test specifications are valid for Bosch Fuel Injection Pump Test Beriches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod trayel mm	= 9.0-12.0 mm Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,0+0,1	19,1-19,3 (18,8-19,6)	0,5 (0,9)	á		
300	5,9-6,	2,2-2,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed	1	Intermediate	rated sp	eed	Lower rated	speed	4	Sliding sleeve travel	
deflection	rev/min Control	Control rod (a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		. ①
of control lever	rod travel	mm rev/min (28)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1200	15,2-17,8	-	-	-	ca. 11		min.7,4	300	1,3-1,4
ca. 66	11 0	1190-1200					300	5,9-6,1	325 390	1,6-2,0
ca. oo		1275-1305				310-530				2,4-2,8 3,0-3,5
	1400	0 - 1,0			-	D10-330			1190	8,5
1										
						3 9				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed (2b) firmitation intermediate speed	Fuel deliv	very characteristics (5a)	idie	fuel delivery 6	Torque- travei	Control roc
rev/min	cm³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	trave! mm
1	2	3	4	5	6	7	8	9
is adj engine with t	ll-load delivusted on the in accordanche engine tion sheet.				100	200,0-240,0 (196,0-244,0)		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85



D. Adjustment Test for Manifold Pressure Compensator MMM 18, 1 6 - 2 -

Testatn =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference				
	Gauge pressure = ba	Gauge pressure = bar	mm (1) .				
PE 8 PRS 7115 + RQVPA 756	0,7	0 0,10	12,0-12,1 10,0-10,1 10,1-10,3				

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-toad control rod travel)

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 RAB 9,7 a 3 2. Edition

PES 6 A 95 D 410 RS 2108 U Komb.-Nr. 0 400 846 247

RQ 200/1100 AB 647 L

supersedes 11.84 Raba company:

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

estoil-ISO 4113

(1.65-1.85)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,0+0,1	10,7-10,9	0,35 (0,6			
200	6,1-6,3	0,9-1,5	0,35(0,55			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Checking of slider PRG check Full-load speed Setting point				cifications (4)	Idle speed regulation Setting point Test specifications (5)				Torque o		(3)
rev/min	Control rod travel mm 2	rev/min 3	Control red travel rnm 4	Control rod travel rnrn 5	rev/min 6	rev/min 7	control rod travel emm 8	rev/min 9	Control rod travel mm		Control rod travel mm 12	•
600	15,4-16,4	600	15,9	10,0 4,0	1145-1160 1195-1225		6,0	200	min. 7,0 5.9-6,1 90 = 2,0	-	~	

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At 145-1160 min⁻¹

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop (3a)	Fuel deliv	ery characteristics 3b	Starting f	uel delivery 6
rev/min 1	cm³/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes/mm 7
1100	107,0-109.0 (105,0-111,0)	-	700 500	104,0-107,0 (101,5-109,5) 98,0-101,0 (95,5-103,5)	100 200	19,5-21,0 mm RW 6,2 mm RW

Checking values in brackets

7.85

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4: 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1: Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 0MB 4,4 c 2

3. Edition

En

PES 4 A 90 D 410 RS 2195 Z Komb.-Nr. 0 400 844 063 RQ 250/1200 AB 849 L

supersedes 1.84
company: OM-Brescia

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Rupp Settings

Port closing at prestroke

(2.10-2.30)

mm (from BUC)

ort croaming at press	(2,10-2,507				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,8+0,	1 6,8-6,9	0,3(0,45			
250	8,4-8,6	1,0-1,6	0,25(0,4	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	thecking of slider RG check Control rod Full-load speed Setting point Control			oint	Test spe	cifications (4)	Idle speed regulation Setting point Test specifications 5			Torque control Control rod		3	
rev/min 1	travel	od C	rev/min	Control rod travel rnm 4	Control red travel rorm 5	rev/min 6	rev/min 7	Control rod travel rnm 8	rev/min 9	Control rod travel mm	rev/min 11	travel	
650	15,6-	16,4	650	16,0	9,8 4,0	1245-1260 1325-1355		6,0	250	min.7,2 5,9-6,1 65=2,0	-	-	

Torque-control travel on flyweight assembly dimension a =

mm

1245-1260 min Speed regulation: At

icultos control feveri bor

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	2	Control rod stop	3 a	Fuel deliv	ery characteristics	3b	Starting t	[Contr
rev/min	cm ³ /-1000 strokes 2		rev/min 3		rev/min 4	cm ³ /~1000 strokes 5		rev/min 6	cm ³ /1000 strokes / mm 7
1200	68,0-69,0 (66,0-71,0)		-	-	800	58,0-62,0 (56,0-64,0)		100	16,3-17,0 mm RW

Checking values in brackets

7.85

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Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 KHD 8,8 a

Edition

estoil-ISO 4113

PES 6 A 95 D 410 RS2416

PES 5 A 95 D 410 RS 2417

PES 4 A 95 D 410 RS2424

RQ.. 865D, 1054

.. A8C616D... A7C616D

EP/RSV .. A8 B616D, A7 B616D engine

ROV 275-1325 AB799D

supersede 3.84

KHD Lizenz TAM F6 L413R (8,8)

F5 L413R (7,4)

F4 L413R (5,9)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

. Ort croom g ar proon	(1)	/0-1,90/				1
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mmi	cm ³ /100 strokes	100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1000	9	7,5 - 8,0	0,4			
	6	3,2 - 4,2				
200	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ 275/1100 AB865D

	Checking of slider Control rod Itravel Tev/min mm Full load speed reconstruction Setting point Control rod Itravel Tev/min mm			Test specifications Control rod I travel		Control rod travel		Test specifications Control rod travel rev/min mm		Control rod travel mm	
600	15,7-16,3	600	16,0	1130 1200 1230 1320	14,5-14,8 6,2-11,5 0 - 9,5		0	100 200 350 460	7,4-8,1 6,2-8,1 2,4-4,6	800	15,8-16,0 14,8-15,0

on flyweight assembly dimension a = 0,35

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor o	felivery on control lever mp 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting t	uel delivery
rev/min	cm'/~1000 strokes 2	rev/min 3	rev/min	cm³/~1000 strokes	rev/min 6	cm³/1000strokes 7
	page 5 - 6				100	114 - 124

Checking values in brackets

4.85

Geschäftsbereich KH Kundendienst. Kfz-Ausrüstung 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1 Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Checking of slider FRG check Text specifications Control rod travel mm 1 2 3 16,0 1223 14,5-14,8 1303 0 - 6,7 1420 0 16,0 1223 14,8-15,0 15,8-16,0 1000 15,0 1000							114	/				
1280 7,0-12,1 1300 0 - 6,7 200 6,1-8,1 350 2,4-4,6 1000 14,8-15,0	PRG che	Control rod	Setting po	control rod travel	Test sper Control rod travel mm	, I	Setting	Control rod travel	Test spe	Control rod travel mm	rev/min	Control rod travel
1 mm loce control	600	15,7-16,3	600	16,0	1280 1300	7,0-12,1 0 - 6,7		0	200 350	6,1-8,1		14,8-15,

Torque-control travel on flyweight assembly dimension a

0,35 _{mm}

Speed regulation At

rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np 40°C (104 F)	Control rod stop	Fuel deliv	ery characteristics 3b	Starting fi Idle spee	Control
rev/min 1	cm ¹ /-1000 strokes 2	rev/min 3	rev/min	cm ¹ /-1000 strokes 5	rev/min 6	rod travel cm ³ /1000 strokes / mm 7
	page 5 - 6					

Checking values in brackets

B. Governor Settings

RQ 275/1325 AB865D

PRG che	ck Control rad	Full Inad : Setting po	Control	Test spec		ldie sper Setting (cifications 5	Torque d	Control rod
rev/min	travel mm	rev/min	mm	rod travel	rev/min	rev/min		rev/min		rev/min	mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,7-16,3	600	16,0	1340 1400 1470 1560	14,5-14,8 9,6-13,0 0 - 8,2 0		0	100 200 350 460	7,4-8,1 6,1-8,1 2,5-4,6 0	800 1000	15,8-16,0 14,8-15,0

Torque control travel on flyweight assembly dimension a -

0,35

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104	(F)	Control rod stop	(3a)	Fuel deliv	ery characteristics	3 b	Starting f	6 Contrai	
rev/min	cm ¹ /-1000	strokes	rev/min		rev/min	cm³/-1000 strokes 5		rev/min	cm³/1000 strokes 7	rod travel / mm
	page	5 - 6								

		or Setting						KHD	1 	
pper rated s legree of eflection	peed	Control rod	Intermediate Degree of deflection	e rated spo 	control rod travel	Lower rated Degree of deflection	speed	Control rod		sleeve trave control trav
f control ever	rev/min	mm	of control lever	rev/min	mm	of control lever	rev/min	mm	rev/min	1
	2	3	4	5	6	7	8	9	10	11
300-		7 0616D B616D			<u> </u>	· · · · · · · · · · · · · · · · · · ·	·····			T
ca. 48	750 800	16,0 8,0 w	thout a	 	ry spring	ca.24	300	6,0	730	0
	820	4,2 W	inout a	UXIII	ry spring		125 300	19,0-21 5,7-6,3		0,7-0
	785 810	9,4-11,6 4,8- 7,7 v	rith aux	iliary	spring		450 560	5,7-6,3 0,6-3,2 0 - 1	330	0,7-0
	940	0,3-1,0								
300-9	900 A7	B616D	L,		·					
ca. 60		16,0	ithout		ary spring	ca.27	300	6,0	880	0
	950 975	9,8 w 6,0	Chouc		ary spring		100 300	19 - 21		
	950	8,6-10,9			ĺ		450	5,7-6,3 0,8-3,3	400	0,9-1
	1000 1100	2,8-4,7 0,3-1,0	With aux	tiliar	y spring		600	0 - 1		
300-	1000 A	8 B616D								
ca. 50	1000 1050	16,0	ithout	mvili	ary spring	ca.21	300	6,0	980	0
	1100	6,5	-	uxiii	rry spring		150 300	19 - 21 5,7-6,3	400	0,9-1
	1050 1120	10,8-12,6 4,0-6,0	with a	vilia	ry spring		500 650	1,2-3,6 0 - 1	400	0,3-1
	1270	0,3-1,0	wren a	.,,,,,	y spi ing		030	0 - 1		
300-1		18 C616D 18 B616D			<u> </u>			<u>1</u>		
ca.55	1150	16,0				ca.20	300	5,5	4440	0
	1200 1250		ithout a	uxili	ary spring		300	5,9-6,1	1140 800	0 0,4 - 0
			-					00=2,0		0,9-1
	1200 1300	11,0-12,8 2,7- 4,6	with a	uxilia	ry spring					
	1430	0,3- 1,0								
300-1		8 C616D 8 B616D								
ca.68	1325	16,0				ca.24	300	6,0	1310	0
	1400		ithout þ	uxili	ary spring		150	19 - 21	ļ	
	1440	5,0	1	I	į		150			
	1440 1400 1450	5,0 8,3-10,5	.		ry spring		300 450 650	5,7-6,3 2,3-4,4 0 - 1	450	0,9-1

En 63

		or Setting:	7			1.				
Upper rated Degree of deflection of control	speed	Control rod travel	Intermediate Degree of deflection of control	e rated sp 	eed Control rod travel	Lower rates Degree of deflection of control	speed	Control rod travel	Sliding s Torque	ileeve trave control trav
lever	rev/min	i	lever	rev/min	mm	lever	rev/min		rev/min	I .
1	2	[3	4	5	6	7	8	9	10	111
RQ 900	0 AB 1	054	· · · · · · · · · · · · · · · · · · ·		·	7	·		,	
ca. 26	850	16,0-19,0	-	-	-	-	-	-	900	3,2
	900	16,0-19,0 9,0-12,5 0,8- 3,8							-	-
RQ 750	D AB 1	<u> </u> 054		<u> </u>	<u> </u>		L	<u> </u>	<u> </u>	
	700	45 0 40 0							750	2.4
ca. 26	750	15,0-18,0 8,8-11,7 0 - 2,4	-	-	_	-	-	_	750	3,4
	800	0 - 2,4							-	-
									l	
	1 .									
	1				<u> </u>					
RQV 27	75-132	5 AB799D			torque-co	ontrol t	ravel	Maβ a = 1	0,9 mm	
ca. 68	1375	15,0-18,0	-	-	-	ca.12	200	6,4-8,2	1375	8,3
	1630						400 600	2,8-4,6 1,5-3,0	1325	0
ca. 66	1325	15,0-17,5 7,4-13,0 0 - 8,0					750 850	0 -1,4 0	500	0,8-1,0
	1490	0 - 8,0					000	J		
	1600	0								
					L					
						I 1				
					;		I			
		·								
		-		1						
				İ						
								1		

En 64

①

C. Settings for Fuel Injection Pump with Fitted Governor

engine Full-los Contro Test or	ad de	livery	Rotational-speed limitation	Fuel deln	very characte	ristics	idle switchir		intermed rotationa Torque- travel	speed
rev/mi	in	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 st	rokes	1	cm ³ /1000 strokes		mm
1 05		2 405/442	105/170	4	5		6	7	8	
		15) - 105(413) - 125(170) 1340	/ 40	<u>50</u> 850	77 6	-80.5	100	119 -	. 129
13	325	80,5-82,5	1340		650		-00,5		113	123
2. 79	9(10	18) - 100(136) - 120(163)	/ 26	<u>50</u>					
13	325	77,5-79,5	1340		850	74,5	-77,5		11	
3. 81	1(11	10) - 101(137) - 121(169)	/ 25	00					
	250	80,5-82,5	1270		850	77,5	-80,5		BB	
			116/150\	/ 250	0					
-)5) - 97(132)		/ 230	<u>8</u> 850	7/ 5	-77,5	•	,,	
12	250	77,5-79,5	1270			74,5	-//,5			
5. <u>74</u>	1(10	00) - 92(125)	- 110(150)	/ 250	0					
12	250	72,5-74,5	1270		850	71,5	-74,5		88	
5. 76	5(10	04 - 96(130)	- 115(156) /	2300						
	150	78,5-80,5	1170		850	77,5	-80,5		u	
				, 000						
		00) - 92(125)		/ 230		74 -	77 -		11	
11	150	74,5-76,5	1170		850	74,5	-77,5			
3. <u>70</u>)(9	95) - 87(118)	- 105(143)	/ 230	<u>0</u>					
11	150	70,5-72,5	1170		850	71,5	-74,5		**	
9. 66	5(9	00) - 83(113)	- 100(136)	/ 230	0					
	50	66,5-68,5	1170	,	<u>-</u> 850	67.5	-70.5		11	•
		05) - 87(118)		/ 215		3 4 -	-		**	
10)75	74,5-76,5	1090		850	74,5	-77,5		11	
1. 66	(9	00) - 82(112)	- 99(135)	/ 2150						
10	75	70,5-72,5	1090		850	71,5	-74,5			
		<u> 79(107)</u>		/ 2150	•					
10	75	66,5-68,5	1090		850	67,5	-70,5		11	
3. 66	5(9	0) - 82(112)	- 99(135) /	2000						
10	00	73,5-75,5	1020		850	73,5	-76,5		13	
L 62	0/ 0	34) - 78(106)	- 94(129) /	2000	· · · · · · · · · · · · · · · · ·					
	000	70,5-72,5	1020	2000	850	71 E	-74,5		n	
						, 1,0	~/4,3			
		2) - 75(102		2000						
10	00	67,5-69,5	1020		850	68,5	-71,5		n	

Checking values in brackets

* 1 mm less control rod travel than col 2

Fu Co	igine power il-load delivery introl-rod stop at oil temp. 40°C (104°F)	Rotational-speed limitation	Fuel dein	very characteristics	idle switchir		Intermed rotations Torque- traval	speed
ren	v/min cm ³ /1000 strakes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min 8	mm
⊦– 6.	60(82) - 76(103)	- 91(124) /	1800		-			1
	900 74,5-76,5	910		-	- *	100	119-	129
7.	57(78) - 72(98)	- 87(118) /	1800					
	900 70,5-72,5	910		•	•		11	
8.	54(74) - 69(94)	- 83(113) /	1800					
	900 67,5-69,5	910		<u>-</u>	-		"	
9.	50(68) - 63(85)		1500					
	750 74,5-76,5	760		•	<u></u>		"	
20.	48(65) - 60(82)		1500					
	750 70,5-72,5	760		-	-			
21.	46(62) - 57(78)		1500					
	750 66,5-68,5	760						
	F 4 - 5 6 L 413 R	•	•	t speed	•			
22.	66(90) - 83(113) 1140 73,5-75,7	-100(136) / 1150	2300				. 14	
			2450					
3.	63(85) - 79(107) 1065 74,5-76,5	-95(129) / 1075	2150				88	
			2000					
4.	60(81) - 75(102) 990 73,5-75,7	1000	2000			•	**	
5	54(74) -69(94) -		B 0 0		····	·		
	890 74,5-76,5	900	<u> </u>			H .		
6.	46(62) - 57(78)		1500				•	
-•	740 73,5-75,5	750						
	E 6 1 /42 ED A	DALIAN ALA						
	F 6 L 413 FR - A 90 / 1500	power output (at spe	ea				
. •	700 85,5-87,5	750-755			-		H,	
8.	106 / 1800							
. •	850 85,5-87,5	900-905					31	

F 4 - 5 - 6 L 413 R -Output at speed -cont-

Test Specifications Fuel Injection Pumps (1A) and Governors

110 %

WPP 001/4 MWM 6,2a

7. Edition

En

A2C 777 R

PES 6 A 90 D 320/3 RS 2483 **estoil-ISO 4113**

RSV 325-1200 A2 R 777DR Change of governor to RSV 400-1200 A2B 777 R

supersede 5.80

MWM company TD 228-6 engine

Komb.-Nr. 0 400 865 072

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,15-2,25 Port closing at prestroke (2,10-2,30) Difference between

mm (from BDC) ; RW=7,5 mm CRT9 + 21 3.5-4.5°

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ¹ /100 strokes 3	Difference cm ^{-/} 100 stro ^{1-e} s 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1180	10,5-10,6	7,3 - 7,4	0,3 (0,45)			
400	6,4-6,6	0,6-1,2	0,2 (0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	er rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 to	rque control Control rod travel mm
loose	800 x =	0,3 -1 ,0				ca. 17	325 100	6,5 min. 19 6,4-6,6	1180 750 500	10,5-10,6 11,5-11,7 11,7-11,8
ca.13	9,5 4,0 1450	1220-1230 1260-1290 0,3-1,7					400 610-67 725		500	11,7511,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

69	ill load stop	6 Rotational- speed limitat		uet delivery naracteristics	Starting I	uel delivery 5	49 It	le stop
Test oil to rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ^{-/} /1000 strokes 5	rev/min	cm/1000 strakes	rev/min B	Control ro travel mm
LDA 1180 LDA 750	0,7 bar 73,0 - 74,0 (71,0 - 76,0) 0,7 bar 79,0 - 82,0 (77,0 - 84,0)	1220-1230*	LDA 500 LDA 500	0,7 bar 72,0 - 74,0 (70,0 - 76,0) 0 bar 56,5 - 59,5 (54,5 - 61,5)	-	•	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

Geschafisbereich KH. Kundendienst. Kfz. Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Alfemagne par Robert Bosch GmbH.

B7

D. Adjustment Test for Manifold Pressure Compensator 1988 6,0 4

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Notes

(1) when n =

rev/min and gauge pressure =

bar (* maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 KHD 1 g 3 9. Edition

En

PES 4 A 85 D 410/3 RS 2638

RSV 325-1150 A0B 2168 L A0B 2168 L supersedes 5,84 KHD

Komb.-Nr. 0 400 864 054

BF 4 L 913

Symbol S 29

66 kW/2300 min-1 tractor DX92 (1)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Symbol S 28

60 kW/2300 min-1 tractor DX86 (2)

BF 4 L 913 T

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2.45-2.65)

mm (from BDCRW=9,0-12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm¥100 strokes	100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1110	12,3+0,1	8,0-8,1	0,3(0,45)			
325	8,1-8,3	0,9-1,5	0,2(0,4)			
						<u></u>

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermediate rated speed		Control- lever deflection in degrees 7		rated speed Control rod travel mm	rev/min	rque control Control rod travel mm	
loose	800 x =	0,3-0,7 1,0	-	-	-	ca. 31	325 325	7,7 8,1-8,3	1110 500 940	12,3-12,4 13,1-13,2 12,7-12,9
ca.55	11,3 4,0 1465	1155-1165 13,0-13,0 0,3- 1,7					700-760	= 2,0	340	1697 1693

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ill-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a) idi	e stop
Test oil to rev/min 1	cm9/1000 strokes	Note: changed to) rev/min 3	rev/min	cm [®] 1000 strokes 5	rev/min	cm ⁹ /1000 strokes 7	rev/min 8	travel mm 9
(1) 1110	80,0-81,0 (78,0-83,0)	1155-1165*	700	79,5-81,5 (77,0-84,0)	100	100,0-110, (97,0-113, = 16,8 - 17,2 mm RW	0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2

7.85

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89

B. Governor Settings

	deflection of control lever 1 2 3						Control- lever deflection in degraes 7 Lower rated specification fravel mm rev/min mm 9			rque control Control rod travel mm
100se ca. 56	800 x = 9.6 4.0 1475	0,3-1,0 4,0 1220-1230 1325-1355 0,3-1,7		-	-	ca.26	325 100 325 720-780	7,0 min.19,0 7,4-7,6 = 2,0	1150 500 900	10,5+0,1 11,2+0,1 10,9+0,3

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	6 Rotational- speed limitat. 3a Fuel delivery characteristics			Starting fuel delivery 5 4a Idle stop				
Test oil te rev/min 1	cm ² /1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7		Control rod travel mm 9	
(2) 1150	74,5-75,5 (72,5-77,5)	1220-1230*	800	65,5-68,5 (63,5-70,5)	100	108,5-118,	5 -	•	
						·	:		

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

	r rated speed Control rod travet mm	Intermed	liate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	rque control Control rod travel mm
29								

C. Settings for Fuel Injection Pump with Fitted Governor

	ili-load stop emp. 40°C (104°F)	Rotational- speed limitat.	3a Fu	nel delivery naracteristics	Starting f	uel delivery 5	49 Idl	e stop Control rod I travel
rev/min 1	cm ⁹ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	mm 9
				•				

Checking values in brackets

* 1 mm less control rod travel than col. 2

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 11,4 b 1

2. Edition

PES 6 A 95 D 410 LS 2639-1

RO 250/1100 AB 1137-7 L

supersedes6 - 83 company MAN

Komb.-Nr. 0 400 846 524

D 2566 MUH/MUM 176 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prest	troke (1,5 - 1,6 1.45-1.65)	mm (from BDC)	RW = 9	,0 - 12,0 mm	
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference. ** cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100 250	13,6+0,1 7,5 -7,7		0,35(0,6 0,35(0,55			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	Full-load s Setting po rev/min 3	•	_	rev/min	Idle spe Setting (rev/min 7	Control rod travel		cifications 5 Control rod travel mm	Torque o	Control rod	3
600	15,6-16,4	600	16,0	12,6 4,0 1350	1145-1160 1270-1300 0 - 1,0		7,0	1	min. 6,9-7,1 35=2,0 max. 1,0	-	-	
	ontrol travel ght assembly dimen	sion a =		mm	Sp	eed regula	11	 45-116	0 min ⁻¹		1 mm less cor rad tr	

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel delive	(DL)	Starting f Idle spee	Control
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	cm ³ /1000 strokes / mm 7
1100	135,0-137,0 (133,0-139,0)	dep	500 700	121,5-125,5 (119,0-128,0) 121,0-124,0 (118,5-126,5)		95,0-105,0 92,0-108,0) = 14,4-14,6 mm RW

Checking values in brackets

7.85

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung.

1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Aflemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MB 2,0 g 4

7. Edition

En

Testoil-ISO 4113

PES 4 M 50 C 320 RS 103 RSF 375/2250 M 19 Komb.-Nr. 0 400 074 978

Sales model 0 400 074 977

company Daimler-Benz engine OM 615 44 kW (60 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

170-180 (1,65-1,85)

mm (from BDC)

18,5-21,5^{Control rod travel}

Rotational speed	Control rod travel	Fuel delivery		Control rod travel	Fuel delivery	Spring pre-tensioning teompensating valves
rev/min	mm	cm 1/100 strokes	cm ¹ /100 strokes	mm	cm 1/100 strokes	mm
1	2	3	4	2	3	6
1000	12,2 ^{+0,1}	3,2-3,3	0,25(0,3)			
375 1800 2200	6,4-6,6	0,65-0,75	0,1 (0,15) 0,25(0,3) 0,で、0,3)			
			I	•		

Set uniform delivery according to the values in []

Checking values in brackets

B. Governor Settings

Lower rated speed			Upper rated speed				Variations in control rod travel		
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of control		Control rod travel	Rotational speed		Rotational speed	Control rod travel
lever	mm	rev/min	lever		mm	rev/miiii	I	rev min	กากา
1	2	3	4		5	6	7	8	9
(2)	nin. 12,0 nax. 11,5 5,4-6.6 5,1-5,3 2,0 7	375	50	(-) (B) (B) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C	11.3-11, 6,7-7, - 0-1,0	5 2200 1 2500 - 2950	(12) (13) (14) (6)	100 1800 1000 Switching p	min. 20,1 11,7-11,9 12,2-12,3

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load delivery (19)		Full-load speed (8a)	Variations delivery	in fixel (17)	Starting fuel delivery lidle			
fest oil tei	np 40 C (104°F)		. (18)				Difference	
rev/min	cm*/1000 strokes	rev/min	rev/min	cm 1/1000 strokes	rev/min	cm ^{-/} /1000 strokes	cm ⁻ /1000 strokes	
1	2	3	4	5	6	7	8	
2200	33,0-35,0 (33,0-36,0)	2500* RW 6,7-7,1	1800	33,0-35,0 (32,0-36,0)	100	min. 53,0	6,0 _(2a)	
			1000	32,0-33,0 (31,0-35,0)	375	6,5-7,5 (5,5-9,0)	1,0 1,5 (15)	
				(61,6 66,6)	2500	12 0 17 0	2,5 See 3,0 Point 8 a	
į.	1		Į.		į	I	•	

Checking values in brackets

*ca.3,5 less control rod travel than in Column 2

BOSCH

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10 00

B12

- the Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (5.0-5.4 mm).
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 mm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 47°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 30°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Control lever against idle stop.

 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 2,0 h

En

2. Edition

supersedes 10.81 Daimler-Benz company OM 615 engine

44 kW (60 PS)

0 400 074 975/..976 1 - 3 - 4 - 2 je 90°

RSF 375/2250 M 20

PES 4 M 50 C 320 RS 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,70-1,80 (1,65-1,85) mm (from BDC)

Control rud travel

18,5-21,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm ⁴ /100 strokes	cm³/100 strokes	mm	cm 1/100 strokes	mm .
1	2	3	4	2	3	6
1000	11,4+0,	2,95-3,05	0,25(0,3)			
375 1900 2200	6,4-6,6	0,65-0,75	0,1 (0,15) 0,25(0,3) 0,25(0,3)			

Set uniform delivery according to the values in [12]

Checking values in brackets

B. Governor Settings

Lower rated:	speed		Upper rated s	ipeed		Variations in co	ontrol rod tra	vel
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed		Rotational speed	Control rod travel
lever	mm	rev/min	lever	mm	tGA/tiliti	1	revimin	mm
\$	2	3	4	5	6	7	8	9
13-17 (1) (2) (3) (4) (5)	20	375	50 (8	0-1,0		(2) (3) (4) (6)	100 1900 2200 Switching p	min.20,1 10,9-11,1 10,7-10,9

C. Settings for Fuel Injection Pump with Governor Mounted

Full toad		Full-load speed (Fegulation	Variations delivery	w	Starting f	uel delivery	Dilloronco	•
restorie	mp 40°C (104°F) cm²/1000 strokes	rev/min 3	rev/min	(18) cm '/1000 strokes 5	rev/min	cm*/1000 strokes	Cm //1000 strokes	•
2200	31,5-33,5 (30,5-34,5)	2500*	1900	32,0-34,0 (31,0-35,0) 29,5-30,5 (28,5-31,5)	100 375 2500	min. 55,0 6,5-7,5 (5,5-9,0) 17,0-21,0 (16,0-22,0)	1,0 (1,5) (2,5 (3,0)See point 8a	5)

Checking values in brackets

*ca. 3.0 less control rod travel than in Column 2

12,85



- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (5.0-5.4 mm).
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 mm.
- 3. Testing the idle-speed auxiliary spring shutoff
 Control-lever position 47°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 30°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Control lever against idle stop.

 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MB 2,2 L

2. Edition

En

Festoil-ISO 4113

PES 4 M 55 C 320 RS 104 RSF 375/2300 M 4 Komb. Nr. 0 400 074 997 supersedes1.85
company Daimler-Benz
OM 615
engine 49 kW

All test specifications are valid for Bosch Fuel Injection Pump 1est Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,70-1,80 (1,65-1,85) mm (from BDC)

Control rod travel

65-1,85) 18,5-21,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (compensating valve)
rev/min	mm	cm ¹ /100 strokes	cm 1/100 strokes	mm	cm 100 strokes	mm
1	2	3	4	2	3	6
1000	13,0+0,1	3,7-3,8	0,25(0,3)			7
375 1600 2300	6,1-6,3	0,65-0,75	0,1 (0,15 0,25(3,0) 0,25(3,0)			
e or e con . The books of a designation						

Set uniform delivery according to the values in [1] [1]

Checking values in brackets

B. Governor Settings

Lower rated spec	ed		Upper rati	ed sp	eed			Variations in co	ntrol rod trav	el
A	Control rod Iravel	Rotational speed	Degree of deflection of control	•	Control rod travel	Rotat	lional speed		Rotational speed	Control rod travel
lever r	mm	rev/min	lever		mm	rev/n	nın	i	rev/min	mm
1	2	3	4		5	6		7	8	9
2 6	nin.11,0 nax.10,5 5,1-6,3 1,8-5,0		50	- - - - - - -	12,4-12 9,5 0-1,0	,6	2300 2570 2950	(2) (3) (4)	100 1600 1000 Switching po	min.20,1 12,7-12,9 13,0-13,1

C. Settings for Fuel Injection Pump with Governor Mounted

Full load (telivery (19)	Full-load speed (8a)	Variations delivery	in fuel (17)	Starting f	uel delivery	!Difference	
rev/min 1	cm ¹ /1000 strokes	rev/min 3	rev/min	cm '/1000 strokes	rev/min	cm 1/1000 strokes	cm 1/1000 stro	kes
2300	38,5-40,5 (37,5-41,5)	2570 * RW = 9,5	1600 1000	38,0-40,0 (37,0-41,0) 37,0-38,0 (36,0-39,0)	100 375 2570	min.53,0 6,5-7,5 (6,0-8,0) 15,0-21,0 (14,0-22,0)	6,0 1,0 (1,5) 6,0 (3,0)	(12a) (15) (16)

Checking values in brackets

*ca. 3,0 less control rod travel than in Column 2

12,85

B16

- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (4.7-5.1 mm).
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 nm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 45°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 28°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- 4. Testing the pneumatic shutoff box

 Control lever against idle stop.

 At $n=375 \, \text{min}^{-1}$ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 2,2 K

2. Edition

PES 4 M 55 C 320 RS 104 RSF 375/2300 M 6 Komb.-Nr. 0 400 074 995 supersedes .85 company Daimler-Benz engine OM 615 49 kW Sweden version

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,70-1,80 (1,65-1,85)

mm (from BDC)

Control rod travel

18,5-21,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm 1/100 strokes	cm³/100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1000	13,0 ⁺⁰ ,1	3,7-3,8	0,25(0,3)			
375 1600 2300	6,1-6,3	0,65-0,75	0,1(0,15) 0,25(0,3) 0,25(0,3)			
			(0,20(0,0)			

Set uniform delivery according to the values in [

Checking values in brackets

B. Governor Settings

Lower rated sp	eed		Upper rated sp	eed		Variations in co	ntrol rod trav	el
Degree of deflection of control	Control rod travel		Degree of deflection of control	Control rod travel	Rotational speed		Rotational speed	Control rod travel
lever	mm	l.	lever	mm	rev/min		rev/min	mm
1	2	3	4	5	6	7	8	9
11-15 ① ② ③ ④ ⑤	min.11, max.10, 6,1-6,3 4,8-5,0 - 2,0	5 300 375		12,4-12 9,5 0-1,0	,6 2300 2650 2900	(12) (13) (14) (6)	100 1600 1000 Switching po	min. 20,1 12,7-12,9 13,0-13,1

C. Settings for Fue! Injection Pump with Governor Mounted

Full-load o		Full load speed (8a) regulation	Variations delivery	in fuel 17	Starting fi	uel delivery		
Test oil te	mp 40°C (104°F)			(8)	ļ	İ	Difference	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm ² /1000 strokes	cm ¹ /1000 strokes	s
1	2	3	4	5	6	7	8	
2300	38,5-40,5 (37,5-41,5)	2650* RW = 9,5	1600 1000	38,0-40,0 (37,0-41,0) 37,0-38,0 (36,0-39,0)		min. 53,0 6,5-7,5 (6,0-8,0) 15,0-21,0	1,0 (1,5) 2,5	(29) (15)
						14,0-22,0)	(3,0)	16)

Checking values in brackets

*ca. 3.0 less control rod travel than in Column 2

B18

- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (4,7-5,1 mm).
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 mm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 45°. No change în control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 28°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Testing the pneumatic shutoff box
 Control lever against idle stop.
 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 2.4 m 1

4. Edition

PES 4 M 55 C 320 RS 107-1 RSF 375/2250 M 17 Komb.-Nr. U 400 074 956

Sales model 0 400 074 957

superseded .85 Daimler-Benz OM 616 53 kW (72 PS) Sweden version

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1 - 3 - 4 - 2

0 - 90 - 180 - 270

2,20-2,30 (2,15-2,35)

mm (from BDC)

Control rod travel

18,5-21,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning tcompensating valves
rev/min	mm	cm ¹ /100 strokes	cm³/100 strokes	mm	cm ⁴ /100 strokes	mm
1	2	3	4	2	3	6
1000	13,4 ⁺⁰ ,	3,9-4,0	0,25(0,3)			
375 1800 2200	6,0-6,	2 0,6-0,7	0,1 (0,15 0,25(0,3) 0,25(0,3)			
				·		

Set uniform delivery according to the values in [______]

Checking values in brackets

B. Governor Settings

Lower rated sp	eed		Upper rated sp	eed		Variations in co	introl rod trav	el
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed		Rotational speed	Control rod travel
lever	mm	rev/min	lever	mm	rev/min		res.min	mm
1	2	3	4	5	6	7	8	9
9-13	min.11,0 max.10,5		50	12.5-12		12	100	min. 20,1
(2)	6,0-6,2 4,8 - 5,0	375	8	0-1,0	_	(3) (14)	1800 1000	12,8-13,0 13,4-13,5
(5)	2,0	720-820	00	_		6	Switching po	r unt

C. Settings for Fuel Injection Pump with Governor Mounted

Full toad d	elivery (19)	Full load speed (8a) regulation	Variations delivery	. ×	Starting f	uel delivery	. Difference
	1			(18)			Dirierence
rev/min	cm 1/1000 strokes	rev/min	rev/min	cm ⁴ /1000 strokes	rev/min	cm*/1000 strokes	cm 1/1000 strokes
1	2	3	4	5	6	7	8
2200	39,5-41,5 (38,5-42,5)	2500* RW 8,2-8,6	1800	39,0-41,0 (38,0-42,0)	100	min. 53,0	6,0
			1000	, ,	375	6,0-7,0	1,0
				(38, 0-41, 0)		(5,5-9,0)	1,5
					2500	23,0-27,0	2,5 See (15)
						(22,0-28,0)	3,0 Point
							8 a (16)

Checking values in brackets

*ca. 4,2 less control rod travel than in Column ?

Geschaftsbereich KH. Kundendienst. Ktz. Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D. 7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Féderale d Allemagne par Robert Bosch GmbH.

- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (4,7-5,1 mm).
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 mm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 47°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 30°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Testing the pneumatic shutoff box
 Control lever against idle stop.
 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 2,4 L 2

1. Edition

PES 4 M 55 C 320 RS 107-1 RSF 375/1700 M 18-1 0 400 074 955

1 - 3 - 4 - 2 je 90°

company Daimler Benz

OM 616 45 kW-

Tunnelling or mining vehicles

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,20-2,30 (2,15-2,35)

mm (from BDC)

20-22

En

Control rod travel

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min 1	mm 2	cm³/100 strokes 3	cm ³ /100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
1650	11,9+0,1	3,55-3,65	0,25(0,3)			
375 1200 600	6,0-6,2	0,6-0,7	0,1(0,15) 0,25(0,3) 0,25(0,3)			

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

Lower rated sp	eed		Upper rated sp	eed		Variations in control rod travel			
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed		Rotational speed	Control rod travel	
lever	mm	rev/min	lever	mm m	rev/min		rev/min	mm	
1	2	3	4	5	6	7	8	9	
② ③ ④	min.11,0 max.10,5 6,0-6,2 4,8-5,0		50 7 8 9 10	0-1,0	1650 1900 2950	(12) (13) (14) (6)	100 1200 600 Switching p	min. 20,1 12,1-12,3 12,8-13,0	

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load de	pp. 40°C (104°F)	Full-load speed 8a regulation	Variations delivery	in fuel 17	Starting f	uel delivery	Difference
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	cm ³ /1000 strokes
1	2	3	4	5	6	7	8
1650	35,5-36,5 (34,5-37,5)	1900* 7,0-7,4 mm RW	600	34,5-36,5 (33,5-37,5) 34,5-36,5 (33,5-37,5)	100 375 1900	min.53,0 6,0-7,0 (5,5-9,0) 16,0-20,0 (15,0-21,0)	6,0 1,0 (1,5) 2,5 (3,0) See Point 8 a 16

Checking values in brackets

ca. 4,7 less control rod travel than in Column 2



- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (4,7-5.1 mm).
- 2. Adjusting the idle control-lever position:

 At 700 min⁻¹, control-rod travel 1.4 1.5 mm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 47°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 30°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Testing the pneumatic shutoff box

 Control lever against idle stop.

 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 VOL 4,5 g

4. Edition

0 4113

PES 4 MW 100/320 RS 1102 0 403 474 001 RSV 300-1000 MW 1 A 315

superseds 10.84 Volvo company TD 45 engine 84 kW

All test specifications are valid for Bosch Fuel Injection Fump Test Benches and Testers

A. Fuel Injection Pump Settings

2,80-2,90 Port closing at prestroke (2,75-2,95)

mm (from BDC) bei RW = 9.0-12.0 mm

Rotational speed rev/min 1	Control rod travel mm . 2	Fuel delivery cm // 100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm//100 strokes 3	Spring pre tensioning (torque control valve) imm 6
700*	11,9+0,1	10,9-11,1	0,35(0,6)			
300	5,6-5,7	1,3-1,7	0,35(0,55)			
1000 • At the r	11,9+0,1	1-load ston. s	0,55(0,7) et a contro	l-rod trav	el of 12.6-12.	7 mm with
n = 1000) min/1. At	the maximum f specifications	ull-load s	op, make t	he full-load a	djustment

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	rate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travet mm	1(3)	rque control Control rad travel mm
Toose	800	0,3-1,0				ca. 12	300 300	5,1-5,2 5,6-5,7)
ca. 52	10,9 4,0 0,3-1,7	1040-1050 1055-1085 7 1200					360-42			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Ft	ill-load stop	6 Rotational- speed limitat		iel delivery naracteristics	Starting I	luel delivery 5	4a Idle stop		
rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm*/1000 strokes	rev/min	cm ¹ /1000 strokes	revinun B	Control rod travel mm 9	
700	109,0-111,0 107,0-113,0)	1040-1050*	1000	110,0-114,0 (107,5-116,5)	300	13,0-17,0 (10,5-19,5	300	5,6-5,	

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

(5)

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MB 3,0 o 1

3. Edition

PES 5 M 55 C 320 RS 108-1

RSF 350/2300 M 15 Komb.-Nr. 0 400 075 991

Sales model 0 400 075 989

company Daimler-Benz OM 617 (65 kW)

1 - 2 - 4 - 5 - 3 0 - 72-144-216-288

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,20-2,30 (2,15-2,35)

mm (from BDC)

20 mm

Control rod travet

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensionin (compensating valve	
rev/min	mm	cm ² /100 strokes	cm 1/100 strokes	mm	cm ⁴ /100 strokes	mm	,
1	2	3	4	2	3	6	1
1000	13,4 ^{+0,1}	3,9-4,0	0,25(0,30)				į
350 1800 2200	6,0-6,2	0,6-0,7	0,1 (0,15) 0,25(0,3) 0,25(0,3)				ı
							:

Set uniform delivery according to the values in [

Checking values in brackets

B. Governor Settings

Lower rated sp	peed		Upper rated	d spe	ed		Variations in co	introl rod trav	rel
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of central	- 1	Control rod . Iravel	Relational speed		Rotational speed	Control rod travel
lever	mm	revimin	lever		mm	rey min		ere min	mm
1	2	3	4		5	6	7	8	9
)-13 (2 (3)	min.10,0 max. 9,5 5,0-6,2	300 350		7 8 9	2.5-12, 8,6-9,0		(P) (13) (4)	100 1800 1000	min. 20,1 13,0-13,2 13,4-13,5
(4)	20	20-820	i :	(i)	0-1,0	2950	6	Switching p	oint

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load o	delivery (19	Full-load speed (8a)	Variations delivery	in fuel 17	Starting t	uel delivery		
fest oil te	mp 40°C (104°F)			18			Difference	
rev/min	cm '/1000 strokes	rev/min	revimin	cm ³ /1000 strokes	rev/min	cm 1/1000 strokes	cm 71000 strok	ces
1	2	3	4	5	6	7	8	
2200	39,5-41,5 (38,5-42,5)	2500* RW 8,6-9,0	1800	39,0-41,0 38,0-42,0)	100	min. 53,0	6,0	(12.3)
			1000	39,0-40,0 38,0-41,0)	350	6,0-7,0 (5,5-9,0)	1,0	\sim
			·		2500	23,0-27,0	2,5See	(15)
			i			(22,0-28,0)	Point 8 a	(16)

Checking values in brackets

*ca. 4.0 less control rod travel than in Column 2

BOSCH

Geschaftsbereich KH. Kundendienst. Klz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuftgart 1. Printed in the Federal Republic of Germany. Imprime en République Federale d'Altemagne par Robert Bosch GmbH.

- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (4,5-4,7).
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 mm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 47°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 30°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Control lever against idle stop.

 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 2,0 n

2. Edition

PES 4 M 55 C 320 RS 152-3 RSF 375/2300 M 55-4 Komb.-Nr. 0 400 074 936

1-3-4-2 0-90-180-270 supersedes 3.85

company Daimler-Benz

OM 601 53 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,00-2,10 (1,95-2,15)

mm (from BDC)

Note: Before starting testing, observe the Control rod travel important instructions on the reverse.

RW = 20,0-22,0 mm

En

Rotational speed	Control rod travel	Fuel delivery		Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm 1/100 strokes	cm³/100 strokes	mm	cm ¹ /100 strokes	mm
1	2	3	4	2	3	6
1000	11,1+0,1	3,1-3,2	0,25(0,3)			
375	5,4-5,6	0,5-0,6	0,1 (0,15)			
1800			0,25(0,3)			
2200			0,25(0,3)			

Set uniform delivery according to the values in [] 1

Checking values in brackets

B. Governor Settings

ower rated sp	eed		Upper rate	ed spe	eed			Variations in co	ntrol rod trav	rel .
Degree of deflection		Rotational speed	Degree of deflection of control	1	Control rod travel	Rotation	ial speed		Rotational speed	Control rod travel
of control ever	mm	rev/min	lever		min	rev/min			rev/min	mm
1	2	3	4		5	6		7	8	9
	4,4-4,6 - 1,5	375	50		11,1-11, 7,8-8,2 0-1,0		1000 2500 2900	(2) (3) (4) (6)	Switching p	min. 20,1 10,8-11,0 10,3-10,5

C. Settings for Fuel Injection Pump with Governor Mounted

Full load d	elivery (19)	Full load speed (8a) regulation	Variations delivery	in fuel (17)	Starting f	uel delivery	
Test oil ten	np 40°C (104°F)	leguanon C	delive.y	l 🖲			Difference
rev/min	cm ¹ /1000 strakes	rev/min	rev/min	cm ³ /1000 strokes	revimin	cm*/1000 strokes	cm 1/1000 strokes
1	2	3	4	5	6	7	. 8
2200	33,0-35,0 32,0-36,0)	2500 * RW = 7,8-8,2	1800	34,0-35,5 (33,0-36,5)	100 375	min. 55 5,0-6,0 (4,5-9,0)	6,0 1,0 (1,5)
			1000	31,0-32,0 (30,0-33,0)	2500	22,0-26,0 (21,0-27,0)	2,5 See (15) (3,0)Point 8 a (16)

Checking values in brackets

less control rod travel than in Column 2 *ca. 2,4

- 1. ** Checking the idle speed auxiliary spring setting at n = 400 rpm, control rod travel (4.3-4.7 nm).
- 2. Setting the idle control lever position:

At 1000 rpm, control rod travel 0.9 - 1.0 mm.

3. Checking the idle speed auxiliary spring shut-off

Control lever position 50°, after change-over point (from starting curve) until 1000 rpm, max. permissible control rod travel 0.2 mm. Control lever position 48.5°; after change-over point (from starting curve) control rod travel must be greater than 0.2 mm.

4. Checking the pneumatic shut-off box

Control lever on idle stop. At n=375 rpm and pu=450 mbar, the control rod must travel rapidly to control rod position = 0 mm.

- 5. Overflow valve 1 469 990 351,
- 6. Port closing difference between largest/smallest value max. 1° camshaft angle.
- 7. Setting the idle speed control rod travel on the pneumatic idle boost box

When doing this, release the lock nut.

8. Checking the pneumatic idle boost:

With 0.4 bar vacuum, n = 425 rpm, control rod travel = (7.0 - 8.6 mm) Delivery = $(11.0 - 19.0 \text{ cm}^3/1000 \text{ strokes})$.

- 9. Apply 0.8 bar vacuum to the pneumatic idle boost box via a three-way valve and a pressure gauge. Using the three-way valve, disconnect the vacuum supply from the pneumatic idle boost box and pressure gauge. Permissible pressure drop 30 mbar in 15 sec.
- 10. Start-of-delivery sensor setting

Start-of-delivery sensor setting and locking according to average port closing value for all cylinders $19.5 \pm 0.2 \, (0.3)^{\circ}$ camshaft angle after cylinder 1.

Test Specifications Fuel Injection Pumps (A) and Governors

40

8.84

WPP 001/4 MWM 8.8 a

5. Edition

PE 6 A 100 C 320 RS 3008

EP/RSV 300-1150 A 1 B 489 DR A 1 C 489 DR

supersedes

PE 8 A 100..

RS 3009

EP/RSV 300-1150 A 1 B 489 DR A 1 C 489 DR engine

MWM D/TD 232 - 6 D/TD 232 - 8

Instructions P. 3

ROV 300/550-750 AB 660 R, 871 R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

estoil-150 4113

2,0-2,1 (1,95-2,15)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel rnm 2	Fuel delivery cm·/100 strokes 3	Spring pre tensioning (torque control valve) mm 6
1130	9,5-9,6	9,0-9,2	0,35(0,6)			
300	6,0-7,1	1,5-2,1	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1	r rated speed Control rod travel mm		Intermed	hate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1 3 /	rque control Control rod travel mm 11
loose	800	0,3-0,7	-	•	-	ca. 25	300	5,5	See r	ote
	x =	4,0					300	5,9-6,1		
ca. 60	8,5 4,0 1400	1170-1180 1200-1230 0,3-1,4					485-545	= 2,0		

the numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

elivery (5)	Starting fuel delivery 5		
1000 strokes re	rev/min cm:/1000 6 7	Control r travel rev/min mm 8 9	
5,7-16,3 RW	100 15,7- mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50: 0-7000 Stuttgart 1. Printed in the Federal Republic of German, tmprime en Republique Federale d Allemagne par Robert Bosch GmbH.

(iA)

B. Governor Settings

RQV .. 660R, 871R**

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod	Intermediate Degree of deflection of control lever	rated spe rev/min 5	ed Control rod travel mm 6	Lowe Degree of deflection of control lever	rev/min	ced Control rod travel mm	3 Tor	que control Control rod travel mm
ca.66	750 770 790	14,8-17,8 9,0-14,0 3,5-10,5		600 650	13,7-15,5 8,5-10,0 4,5-7,0		250 300 350	6,8-8,0 4,5-7,0 3,6-4,0		
(5)	800 840	0 - 8 0		720	0		550 630	1,8-4,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	oad slop	6 Rotational- speed limitat		el delivery aracteristics	Starting Idle	fuel delivery	5a Idle stop	
Test oil temp 40°C (104°F) rev/min cm²/1000 strokes 1 2		Note changed to rev/min 3	rev/min	min cm 1/1000 strokes		cm ⁴ /1000 strokes 7	rev/min 8	Control rod travel mm 9
See pag	e 4-14				100	15,7-16,3 mm RW		
			6 a)		300	5,3-5,7 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

1 Upper Degree of delirection of control lever	rated speed rev/min 2	Intermediate Degree of deflection of control lever	ed Control rod travel mm 6	4 Lowe Degree of deflection of control lever	rev/min	ed Control rod travel mm	que control Control rod travel mm
(5)							

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full le	oad stop	6 Rotational speed limitat			Starting Idle	fuel delivery	5a) Idle stop	
Test oil fem	cm ¹ /1000 strokes	Note changed to rev/min 3	rev/min	cm³/1000 strokes 5	rev/min cm³/1000 strokes			Control rod travel mm 9

Checking values in brackets

* 1 mm less control rod travel than col. 2

** Governor ..871R = electromagnetic starting fuel delivery unlocking (24 volt)
Switch on magnet for max. 15 sec. when testing.

The nameplate described at \underline{MWM} 1.5 a has recently been extended to 2 speeds and 2 deliveries - in column n = (speed) and Q = (full-load delivery) for more accurate setting in the case of governors with torque control.

The following points apply, deviating from WPP 001/4, Supplement 1, setting the governor and the pump:

- (2) Setting according to nameplate n = (speed 1) and Q = (delivery 1); or according to columns 1 and 2
- (3) Is contacted until change of control-rod travel, as read under (2), or (with new nameplate) until the 2 delivery is reached at speed 2; or according to columns 4 and 5
- (6) Is adjusted according to nameplate n = (speed 1 +
 20 rpm) or column 3

For repairs on Fendt tractors on which the new nameplate (with 2 speeds and 2 deliveries) has not yet been introduced, the full-load data apply - ordered according to engine types -

according to the above note

In the case of new replacement pumps from Stuttgart warehouse there is no spring retainer. Send for from MWM according to old nameplate.

Cam sequence and angular spacing:

PE 6 A:

PE 8 A:

①

engine por Full-load de Control-roo Test oil tem	elivery	Rotational-speed limitation	Fuel deli	very characteristics	Idle	fuel delivery	Intermed rotationa Torque- travel	l speed
rev/min	cm ^{\$} /1000 strokes 2	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	mm
165 P	5 / 2500 mi	n-1	7	1	,	•	•	•
250	81,0-83,0	1270	750	82,5-85,5				
'162 P	5 / 2500 mi	n-1						
250	81,0-83,0	1270	750	82,5-85,5				
162 PS	S / 2500 mi	n-1						
250	81,0-83,0	1270						
160 P								
150	80,0-82,0	1170	750	82,5-85,5				
1155 PS	5 / 2300 mi	n-1						
150	80,0-82,0	1170	750	82,5-85,5				
155 P	5 / 2300 mi	n-1						
150	80,0-82,0	1170						
141 PS	5 / 2300 mi	n-1						
185	76,0-78,0	1200						
'144 PS	5 / 2100 mi	n-1						
050	77,0-79,0	1060	750	82,5-85,5				
144 PS	5 / 2100 mi	n-1						
050	77,0-79,0	1060						•
131 PS	5 / 2100 mi	n-1						
080	73,0-75,0	1090						
144 PS	5 / 2000 mi	n-1						
000	77,0-79,0	1010	750	82,5-85,5				
1138 P	5 / 2000 mi	n-1						
000	77,0-79,0	1010		82,5-85,5		,		

C: Settings for Fuel Injection Pump with Fitted Governor

Full-loa Contro	a power ad delivery ol-rod stop I temp 40°C (104°F)	Rotational-speed limitation	Fuel deli	very characteristics	Idle	fuel delivery	Intermed rotationa Torque- travel	speed
rev/mir	n cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm
13	2	3	4	5	6	7	8	
B 138	PS / 2000 mi	n-1						
1000	77,0-79,0	1010			_			
A 126	PS / 2000 mi	n-1						
1030	73,0-75,0	1040						
B 127	PS / 1800 mi	n-1						
900	78,0-80,0	910						
A'115	PS / 1800 mi	n-1						
900	78,0-80,0	910						
A 115	PS / 1800 mi	n-1		•				
930	74,0-76,0	940						
B 108	PS / 1500 mi	n-1						
750	80,0-82,0	⁻ 760				•		
A' 98	PS / 1500 min	n-1						
750	80,0-82,0	760						
A 98	PS / 1500 mii	n-1						
775	76,0-78,0	785				•		
B 162	PS / 2300 min	n-1						
1150 Specia	83,0-85,0 al cutput	1170						
		4						
D 143					4.			
900 Emerge	89,0-91,0 ency power outpo	910 ut						eranti
C 130	PS / 1800 mir	₁ -1	-					
900	89,0-91,0	910						
Emerg	ency power outp	ut						

En

Testoil-ISO 4113

C: Settings for Fuel Injection Pump with Fitted Governor

engine ; Full-load Control- Test oil to	delivery	Rotational-speed limitation	Fuel deln	very characteristics	Starting fuel delivery idle switching point		intermediate rotational speed Torque-control travei	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm

D 120 PS / 1500 min⁻¹

750 90,0-92,0 760

Emergency power output

C 109 PS / 1500 min⁻¹

750 90,0-92,0 760

Emergency power output

0

engine (Full-load Control-t Test oil to	delivery	Rotational-speed limitation	Fuel dela	very characteristics	idle switchin		Intermed rotationa Torque- travel	speed
rev/min	cm ^S /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes		cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	-
F 220	PS / 2500 r	nin-1						
1250	81.0-83,0	1270	750	82,5-85,5				
B'216	PS / 2500 r	nin-1						
1250	81,0-83,0	1270	750	82,5-85,5				
B 216	PS / 2500 r	nin-1						
1250	81,0-83,0	1270 -						
F 213	PS / 2300 r	nin-1						
1150	80,0-82,0	1170	750	82,5-85,5	•			
B'206	PS / 2300 r	nin-1	-					4
1150	80,0-82,0	1170	750	82,5-85,5		:		
B 206	PS / 2300 r	nin-1	·					
1150	80,0-82,0	1170						:
A 188	PS / 2300 r	nin-1						
1185	76,0-78,0	1200				•		•
B'192	PS / 2100 r	nin-1						
1050	77,0-79,0	1060	750	82,5-85,5				
B 192	PS / 2100 r	nin-1						
1050	77,0-79,0	1060				-		
A 175	PS / 2100 r	nin-1						
1080	73,0-75,0	1090						
F 192	PS / 2000 r	nin-1						
1030	77.0-79,0	1040	750	82,5-85,5	•			
B' 184	PS / 2000 r	nin-1						
1000	, 77,0-79,0	1010	750	82,5-85,5				•

engine po Full-load de Control-rod Test oil ten	elivery -	Rotational-speed limitation	Fuel delin			Starting fuel delivery idle switching point		iate I speed control
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
			1	•	•	•		

В	184	PS	1	2000	min"	_
10	100	77	,0-	-79,0		1010

B_	144	PS	/	1500	min-1	
7	75	80	.0-	-82,0		785

A'130	PS	/	1500	min ⁻¹	
750	86	0.0	-82.0		760

A 130	PS	1	1500	min-1	
750	70	5.0	-78,0		760

B 216 P	S /	2300	min-1	_
1150	83,0	-85,0		1170
Special	outp	ut		

D 190 PS	/ 1800	0 min ⁻¹	
900 89,0-			910
Emergency	-	output	

C 173	PS	/ 1800	min-1	
900	89,	0-91,0		910
Emerge	ency p	ower o	utput	

760

C: Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min mm	engine po Full-load di Control-roi Test oil ten	elivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchir	fuel delivery	Intermedi rotational Torque-c travel	speed
	rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	1	mm

D 160 PS / 1500 min-1

750 90,0-92,0 760 Emergency power output

C 145 PS / 1500 min-1

750 90,0-92,0 Emergency power output

Checking values in brackets

①

engine power Full-load delivery Control-rod stop Test oil temp 40		Rotational-speed limitation	Fuel deliv	rery characteristics	Idle	fuel delivery ng point	Intermed rotationa Torque- travel	I speed
rev/min cm ³ /	1000 strakes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/mın	cm ³ /1000 strokes		mm
1 2 2	/ 0200	 			1			
F 210 PS 1150 105	/ 2300 m	1170	800	104,5-107,5				
B'207 PS	/ 2300 m	in-1						
1150 105	,0-107,0	1170	800	104,5-107,5				
B 207 PS	/ 2300 m	in-1						
1150 105	,0-107,0	1170						
A 188 PS	/ 2300 m	in-1						
1185 101	,0-103,0	1200						
B'192 PS	/ 2100 m	in-1					,	-
1050 103	3,0-105,0	1060	800	104,5-107,5				
B 192 PS	/ 2100 m	in ⁻¹						
1050 103	3,0-105,0	1060						
A 174 PS	/ 2100 m	in-1						
1080 99	0-101,0	1090						
F 192 PS	/ 2000 m	in-1						1
1000 102	2,0-104,0	1010	800	104,5-107,5				
B'184 PS	/ 2000 m	in-1						•
1000 102	2,0-104,0	1010	800	104,5-107,5				
B 184 PS	/ 2000 m	in-1						
1000 102	2,0-104,0	1010					· · · · · · · · · · · · · · · · · · ·	
A 167 PS	/ 2000 m	in-1						,
1030 98	0-100,0	1040						
B 168 PS	/ 1800 m	in-1						
900 101	,0-103,0	910						

engine po Full-load o Control-ro Test oil tei	lelivery	Rotational-speed limitation	Fuel deli	very characteristics	Idle	fuel delivery	intermed rotationa Torque- travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
A'153	' PS / 1800 m [.]	in ⁻¹	'	•	•	•	•	
900	101,0-103,0	910						
153	PS / 1800 m	in-1						
930	97,0-99,0	940						•
142	PS / 1500 m	in-1						
750	100,0-102,0	760	•					
A'129	PS / 1500 m	in-1						
750	100,0-102,0	760	٠				e e	
A 129	PS / 1500 m	in-1		•				
775	96,0-98,0	785						

engine p Full-load (Control-re Test oil te	delivery	Rotational-speed limitation	Fuel dela	very characteristics	Starting Idle switchir	fuel delivery ng point	intermed rotationa Torque- travel	l speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1	cm ³ /1000 strokes	rev/min 8	mm
1	2	1	 -	5	6		10-	
F 292	PS / 2500 mi	in ⁻¹						
1250	102,0-104,0	1270	800	100,5-103,5				
B1292	PS / 2500 mi	in-1						
1250	102,0-104,0	1270	800	100,5-103,5				
B 292	PS / 2500 mi	in-1						
1250	102,0-104,0	1270		,				
F 280	PS / 2300 mi	in-1						
1150	100,0-102,0	1170	800	100,5-103,5				
B'275	PS / 2300 mi	in-1						
1150	100,0-102,0	1170	800	100,5-103,5				*
B 275	PS / 2300 m	in-1						
1150	100,0-102,0	1170						
A 250	PS / 2300 mi	in-1						
1185	96,0-98,0	1200						
B'255	PS / 2100 mi	in-1						
1050	99,0-101,0	1060	800	100,5-103,5				
B 255	PS / 2100 mi	in−1					<u> </u>	
1050	99,0-101,0	1060						
A 232	PS / 2100 mi	n-1						
1080	95,0-97,0	1060					٠	:
F 256	PS / 2000 mi	<u>n-1</u>	<u> </u>					
1000	99,0-101.0	1010	800	100,5-103,5				
B'245	PS / 2000 mi	n-1						
1000	99,0-101,0	1010	800	100,5-103,5				

TD 232 V 8 Output at speed -cont-

engine po Full·load o Control·ro Test oil tei	lelivery	Rotational-speed imitation	Fuel deli	very characteristics	Starting Idle switchin	fuel delivery ng point	Intermed rotationa Torque- travel	l speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
B 245	PS / 2000 m	in-1						
1000	99,0-101,0	1010						
A 222	PS / 2000 m	in-1			·····		***************************************	
1030	95,0-97,0	1040		_				
B 224								
900	99,0-101,0	910						
A'203	PS / 1800 m	nin-1						
900	99,0-101,0	910						
A 203	PS / 1800 m	in-1						
930	95,0-97,0	940						
B 189	PS / 1500 m	in-1						
750	98,0-100,0	760						
A'172	PS / 1500 m	in-1				,		
750	98,0-100,0	760						
A 172	PS / 1500 m	nin-1						
750	94,0-96,0	760						
D 250	PS / 1800 m	nin-1						
900 Emerge	111,0-113,0 ency power out	910 put						
C 227	PS / 1800 m	nin-1						
900 Emerge	111,0-113,0 ency power out	910 put						
D 210	PS / 1500 m	in-1					·	
750	111,0-113,0	760						

C: Settings for Fuel Injection Pump with Fitted Governor

engine por Full-toad de Control-rod Test oil ten	elivery '	Rotational-speed limitation	Fuel delivery characteristic		Starting fuel delivery Idle switching point		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm
11	2	3	ļ					

C 191 PS / 1500 min⁻¹ 111,0-113,0 760 750

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 i

6. Edition

En

PE 6 P 110 A 320 RS 372

RSV 250-1100 P 5/458 R

supersedes 5.84

Komb.-Nr. 0 401 876 235

Note VDT-I-420/114!

company DAF

engine

DKTD 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2

Testoil-ISO 4113

75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ^{-/} 100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm	Fuel delivery cm/100 strokes 3	Spring pre tensioning (torque-control valve) mm
850	12,0+0,1	13,7-14,0	0,4 (0,75)			
250	6,6-6,8	0,7-1,2	0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	rated speed Control rod travel mm		Intermed	diate rated	speed	Control lever dellection in degrees 7		rated speed Control rod travel mm	11 9 1	rque control Control rod travel mm
loose	800 $x = 3$	0,3-1,0 5	1	-	-	ca. 21	250 250	6,2 6,6-6,8	400 300	12,2-12,3 12,4-12,9
ca. 51	11,0 4,0 1425	1140-1150 1275-1305 0,3-1,7					640-700	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat	nel delivery aracteristics	Starting fuel delivery 5			e stop Control rud	
rev/min 1	cm ¹ /1000 strokes 2	changed to) rev/min 3	∙c.⊬min 4	cm ^{-/} 1000 strokes 5	rev/min 6	cm/1000 strokes 7	tev/min 8	travel mm 9
LDA 850	0,7 bar 136,5-139,5 (134,0-142,0)	1140-1150 *	LDA 600	0 bar 127,5-130,5 (125,0-133,0)	100	245,0-285, (241,0-289 = 19,5 - 21,0 mm RW	0 250 ,0)	6,7

Checking values in brackets

* 1 mm less control rod travel than col 2

8.85

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung. 1980 by Robert Bosch GmbH. Positisch 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federal et Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 i

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure har	Gauge pressure bar	mm (1)
PE 6 P RS 372 + RSV P5/458 R	0,70	0 0,30 0,26	12,0-12,1 11,4-11,5 11,8-11,9 11,5-11,7

Notes

(1) when n

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 DAF 11,6K1 4. Edition

estoil-ISO 4113

PE6P120A320RS372

RQ250/1100PA 417 R

supersedes 11.82

Komb.-Nr. 0 401 846 396

company DKS 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pymp Settings

Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	10,9-11,	0 19,3 -19,7	0,5(0,9)			
250	6,2-6,4	1,1 - 1,5	,65(0,95)		
		,				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod	D		int Control rod travel	Test spec Control red travel	rev/min	Idle spec Setting p rev/min 7	Control rod travel	Test spe	cifications (5) Control rod Itravel mm	Torque o	Control rod (3)
700	15,6-16,	4	700	16,0	9,9 4,0 1350	1145-1160 1210-1240 0 - 1,0		6,3	250	min.7,4 6,2-6,4 185=2,0		10,9-11,0 10,8-11,0

Torque control travel on flyweight assembly dimension a =

mm

Speed regulation. At 1145-1160 min

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	delivery on control lever pp 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	Control
rev/min	cm ¹ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	rod travel cm ¹ /1000 strokes / mm 7
LDA 850	0,7 har 193,0 - 197,0 (190,0 -200,0)	•	I.DA 600	0 bar 133,5-137,5 (130,0-141,0)	100 250	320,0 - 360,0 = 19,5-21,0 mm RW 6,3 mm RW

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 k I

Testatn -

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel difference
	Gauge pressure bar	Gauge pressure - bar	mm (1)
FE 6 P. RS 377 + RQ . FA 417 R	0,70	0 0,30 0,26	10, 9- 11,0 2,8- 9,9 10,6- 10,7 10,0- 10,2

Notes

(1) when n "

rev/min and gauge pressure =

bar (* maximum full-load control rod travel)

estoil-ISO

40

WPP 001/4 DAF 11,6 k 5 2. Edition

Eπ

PE6P120A 320 RS 372-1

Komb-Nr. 0 401 846 503

RQ 250/1000 PA 417-3

supersedes 7.84

company.

DAF DKSB

engine

215 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75–2,95) mm (from

ione (2,75-2,95)				
Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
11,2+0,	17,9-18,1	0,5(0,9)			
6,6-6,8	1,4-2,0	0,8(1,2)			
				•	
	Control rod travel mm 2 11,2+0,	travel cm³/100 strokes 2 3 11,2+0, 1 17,9-18,1	Control rod travel mm cm³/100 strokes 2 11,2+0, 17,9-18,1 O,5(0,9)	Control rod travel mm	Control rod travel mm

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	g of slider	Full-load	•	•		idie spe	-		\sim	Torque	
PRG che rev/min 1	Control rod	Setting por rev/min 3	control rod travel rom 4	Test spec Control rad travel mm 5	cifications (4) rev/min 6	Setting previous	Control rod travel	· `	cifications (5) Control rod travel mm 10	rev/min	Control rod (3)
700	15,6-16,4	700	16,0		1035-1050 1095-1125 0-1,0	250		250	min.7,4 6,2-6,4 85=2,0	1	11,4-11,5 11,3-11,5
Torque-c	ontrol travel		0			<u>[</u>		035-1	050 min		1 mm less control

on flyweight assembly dimension a =

mm

Speed regulation: At

I mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed Control		
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	od travel cm ³ /1000 strokes-/ mm 7	
LDA 850	0,7 bar 179,0-181,0 (176,0-184,0)	-	LDA 600	0 bar 135,5-137,5 (132,5-140,5)	100	305,0-345,0 (301,0-349,0)	
					250	6,2-6,4 mm RW	

Checking values in brackets

8.85

BOSCH

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6k5

-2-

Test at n =

600

rev/min decreasing pressure – in bar gauge pressure

Setting	Measurement	diminution Control rod travel difference
Gauge pressure : bar	Gauge pressure - bar	mm (1)
0,70	0 0,33 0,30	11,2-11,3 10,2-10,3 10,9-11,0 10,4-10,6
	Gauge pressure bar	Gauge pressure bar Gauge pressure bar 0,70 0 0,33

Notes

(1) when n =

rev/min and gauge pressure -

bar (- maximum full load control rod travel)

C24

40

WPP 001/4 DAF 8,3 1 3

1. Edition

PE 6 P 100 A 720 RS 373

RSV 250-1200 P0/447 R

Komb.-Nr. 0 401 876 230

company DAF DHU 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,5 - 2,6 (2,45-2,65)

mm (from BDC) RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel	Fuel delivery cm ¹ /100 strokes	Oifference cm ^{-/} 100 strokes	Control rod travel mm	Fuel delivery cm /100 strakes	Spring pre-tensioning (torque-control valve) mm 6
1000	12,3+0,1	12,7-12,9	0,35(0,6)			
250	7,2-7,4	0,8-1,2	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control root travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Control- lever deflection rev/min		11 9 1	rque control Control rod travel mm 1 t
loose	800 x =	0,3-1,0 4,5 1240-1250	00	•	•	ca. 23	250 250 560-62	6,8 7,2-7,4 0 = 2,0	400 300	12,5-12,6 12,7-13,2
23	4,0 1500	1350-1380 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ill-load stop	6 Rotational- speed limitat	Rotational Sa Fuel delivery characteristics				4a Idle stop		
Test oil to rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ^y /1000 strokes 5	rev/min	cm/1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 1000	0,7 bar 127,0-129,0 (125,0-131,0)	1240-1250*	LDA 500	0 bar 89,5-92,5 (87,5-94,5)	100	195,0-215 (191,0-219		7,3	

Checking values in brackets

* 1 mm less control rod travel than col 2

9.85

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung r. 1980 by Robert Bosch GmbH. Postlach 50. D-7000 Stuttgart 1*Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator DAF 8,3 1 3

Test at n =

600

rev/min decreasing pressure ~ in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
PE 6 PRS 373 + RSVPO/447 R	0,70	0 0,22 0,15	12,3-12,4 11,1-11,2 12,0-12,1 11,4-11,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

2

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MAN 11.1 g 30

1. Edition

En

PES 6 P 110 A 720 LS 375 Komb.-Nr. 0 402 046 315

RQ 250/1100 PA 752

supersedes companyMAN engine D 2566 MTUE

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.95-3.15)

mm (from BDC) Cy1. 6; RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,1+0,1	13,9-14,2	0,4(0,75)			
250	7,4-7,6	1,0-1,5	0,45(0,75)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

- 1	heckin	g of slider ck	1	Full-load s	*	•	cifications (4)	idle spec	•		cifications (5)	Torque o	control (3)
71	ev/min	Control ro travel mm 2	d U	rev/min 3	Control red travel mm 4	Centrel red travel rnm 5	rev/min	rev/min 7	Control rad travel mma 8	rev/min 9	Control rod travel mm 10	rev/min	Control rod travel mm 12
Ĺ	600	19,2-	20,8	600	20,0	11,1	1145-1160	250	7,5	100 (nin. 8,9	1100	12,1-12,2
	VH =	max.	46 °			4,0 1350	1190-1220 0 - 1,0			250	7,4-7,6	700	12,1-12,3
											60 =:==1		

Torque-control travel on flyweight assembly dimension a

mm

1145-1160 min

t mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics 3b	Starting to	fuel delivery 6 Control
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm 7
LDA 1100	0,7 bar 139,0-142,0 (136,5-144,5)	•	LDA 500	0,2 bar 126,0-130,0 (123,0-133,0)	100	225,0-245,0 (221,0-249,0)
LDA 700	0,7 bar 132,0-138,0 (129,0-141,0)		LDA 500	0 bar 113,0-116,0 (110,5-118,5)	250	10,0-15,0 (7,5-17,5)

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,1 q 30 - 2 -

Testatn -

500

rev/min decreasing pressure - in bar gauge pressure increasing

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 PLS375 + RQ PA 752	0,70	0 0,20	12,1-12,2 11,5-11,6 11,9-12,0

Notes

(1) when n -

rev/min and gauge pressure =

bar (* maximum full load control rod travel)

WPP 001/4 SCA 9.0 d 1

1. Edition

PE 6 P 110 A 720 RS 3034 T Komb.-Nr. 0 401 846 709 T

ROV 200-1200 PA 275 R

supersedes

Scania company

DS 804 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,3-3,4 (3,25-3,45) Port closing at prestroke

mm (from BDC); Cyl. 1; RW = 9,0-12,0 mm

		(3)20 0110/				
Rotational speed	Control rod travet mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
<u> </u>				-		
600	12,6+0,1	11,7-11,9	0,5(0,7)	1		2,4-2,6
			_			(2,2-2,9)
225	5,9-6,1	1,5-1,9	0,2(0,4)			
	:			Î		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	speed			Intermediate	rated sp	eed	Lower rated	speed		Stiding	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	travei	\subseteq	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3 9	rev/min	mm 11
max.	1200	15,2-17	8,	-	-	-	ca. 9	100	min.7,4		
ca. 62	11,6 4,0 1500	1240-12 1380-14 0-1,	10					225 410-4	5,9-6,1 70=2,0		
							3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-foad d Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed	high idle s	very characteristics (5e) peed (5b)	idie switchis	, 0	Torque- travel	control 5 Control rod travel
1	2	3	4	5	6	7	8	9
LDA 600	0,9 bar 117,0-119,0 (115,0-121,0)	1240-1250*	LDA 1200 LDA	0,9 bar 123,5-128,5 (122,0-130,0 0 bar		190,0-240,0	-	-
			500	81,0-85,0 (79,0-97,0)				

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

Geschäftsbereich KM, Kundendienst, Kfz-Ausrustung C by Robert Bosch GmbM. D-7 Stuttgert 1, Postlach 50. Printed in the Federa) Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbM

D. Adjustment Test for Manifold Pressure Compensator SCA 8,0 d 1

rev/min decreasing pressure - in bar gauge pressure 500 Test at n = diminution Measurement Setting Pump/governor Control rod traveldifference (1) bar mm Gauge pressure = Gauge pressure -12,6-12,7 0,9 PE 6 P. RS 3034 T 11,0-11,1 + RQV..PA 275 R 12,0-12,1 0,37 11,3-11,5 0,26

Notes
(1) when n

rev/min and gauge pressure

bar (maximum full load control rod travel)

- 2 -

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 22.8.1983
- Start of fuel delivery-engine: 15° before TDC
- Firing sequence, engine : 1-5-3-6-2-4

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 SCA 11,0 r 9

1. Edition

PE 6 P 110 A 720 RS 3040 T Komb.-Nr. 0 401 846 710 T

RQV 250-1050 PA 379 R

supersedes

Scania company. DS 1111

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC); cy1. 1; RW = 9,0-12,0 mm Port closing at prestroke

Rotational speed rev/min 1	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	13,4+0,1	17,0-17,2	0,6(0,8)			3,2-3,4 (3,0-3,5)
225	4,4-4,6	1,7-2,1	0,2(0,4)			(3,0-3,3)
			:			

Adjust the fuel delivery from each outlet according to the values in g

B. Governor Settings

Upper rated s	peed	- 	Intermediate	rated sp	eed	Lower rated	speed		Stiding steeve travel		
deflection	rev/min Control rod travel	Control rod (a) travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0	
	mm	rev/min (2a)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm	
1	2	3	4	5	6	7	8	9	10	11	
max.	1100	15,2-17,8	-	-	-	ca. 10		min.5,9			
ca. 62	12,4	1090-1100 1235-1265					225 3 1 0-3	4,4-4,6 70=2,0			
	1400	0-1,0									
						39					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		limitation intermediate speed	high idle s	rery characteristics (5e)	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4e	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 600	0,9 bar 170,0-172,0 (168,0-174,0		LDA 1050	0,9 bar 164,5-169,5 (162,0-172,0		240,0-290,0	-	-
			LDA 500	0 bar 128,0-132,0 (126,0-134,0				

Checking values in brackets

* 1 mm less control rod travel than col 2

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D. Adjustment Test for Manifold Pressure Compensator SCA 11,0 r 9

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure bar	Gauge pressure = bar	mm (1)
PE 6 PRS 3040 T + RQVPA 379 R	0,9	0 0,37 0,25	13,4-13,5 11,7-11,8 12,7-12,8 11,8-12,0

Notes (1) when n

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-1-400/117
- Test specifications approved by Scania on 11.2.1985
- Start of fuel delivery-engine: 20° before TDC
- Firing sequence, engine : 1-5-3-6-2-4

Testoil-ISO 4113

WPP 001/4 FOR 6.6 c

1. Edition

ROV 350-1300 PA 772 PES 6 P 110 A 720 RS 3149

Komb.-Nr. 9 400 087 334

Values only apply to test nozzle-and-holder assembly 1 688 901 017 and fuel-injection test tubing 1 680 750 008

supersedes -

company Ford

66 TC 121,3 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

troke	(4,20-4,40)	mm (from BDC)	Cyl. 1;	RW = 9.0-12.0 m	m
Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
2	3	4	2	3	6
13,4+0,1	10,8-11,0	0,5(0,9)			
7,2-7,4	1,6-2,0	0,35(0,55)		}
	Control rod travel mm 2	Control rod travel Fuel delivery cm ³ /100 strokes 3 13,4+0,1 10,8-11,0	Control rod travel Fuel delivery Difference Cm ² /100 strokes 2 13,4+0,1 10,8-11,0 0,5(0,9)	Control rod travel mm cm³/100 strokes cm³/100 strokes 13,4+0,1 10,8-11,0 cmm (rom BDC) Cy1.1; Difference control rod travel cm²/ 100 strokes 2 0,5(0,9)	Control rod travel Control rod travel

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

peed	1		Intermediate	rated sp				speed			Sliding sleeve travel	
		(b)			Degree of deflection		Control rod		. 0			
		20		rev/min	mm	•	of control lever	rev/min	mm	3	rev/min	mm
2	3		4	5	6		7	8	9		10	11
1300	15,2-1	7,8	-	-			ca. 13	100			350	0,6-1,3
12,4	1360-1	370			l							2,3-2,7
4.0	15/00-1	530			l			000-0	000=2,0	,		4,0-4,3
							370-440					5,0-5,3 7,3
											1300	,,5
							3					
	rev/min Control rod travel mm 2 1300 12,4 4,0	rev/min Control rod travel rod travel mm rev/min 3 1300 15,2-1 12,4 1360-1 4,0 1500-1	Control rod (revel) rod (revel) rod (ravel) row (rev/min) 2 2 3 1300 15,2-17,8 12,4 1360-1370 4,0 1500-1530	Control rod travel rod travel rod travel rod travel row/min 2 1300 15,2-17,8 12,4 1360-1370 4,0 1500-1530	rev/min Control rod (ravel row) (ravel row	Control rod Control rod Control rod Control rod travel Control rod rod rod rod rod rod rod rod rod rod	Control rod travel Control	Perv/min Control rod Travel Control rod travel Control rod travel Control rod travel Control rod travel Control rev/min Control rod travel Control rev/min Control r	Control rod travel Control	Control rod travel Control	Control rod travel Control	Control rod Control rod

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	distop	imitation stemediate speed	mediate speed		Starting Idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	
1	2	3	4	5	6	7	8	. 9
LDA 1300	1,0bar 108,0-110,0 (105,0-113,0)	1360-1370*	LDA 600	1,0 bar 106,5-110,5 (104,5-112,5	100	100,0-120,0 (96,0-124,0		
			LDA 500	0 bar 79,5-81,5 (76,5-84,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85



23

D. Adjustment Test for Manifold Pressure Compensator

FOR 6,6 c

- 2

Test at n "

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure bar	Gauge pressure bar	mm (1)
PES 6 PRS 3149 + RQVPA 772	1,0	0 0,45 0,70	13,4-13,5 11,9-12,0 12,2-12,3 13,0-13,2

Notes

(1) when n =

rev/min and gauge pressure =

bar (maximum full-load control rod travel)

Testoil-ISO 4113

40

WPP 001/4 MAN 20,9 u

1. Edition

En

PE 12 P 120 A 520/4 LS 3828

RQ 1200 PA 660-1

supersedes - Company MAN

1-5-9-8-3-4-11-10-2-6-7-12

0-15-60-75-120-135-180-195-240-255-300-315° ± 0,5° (± 0,75°) engine

D 2842 LE 559 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

Komb.-Nr. 0 401 840 728

st tubing 1 680 750 967 MAN-Nr. 2-7686

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(4.15-4.35)

mm (from BDC) Zy1. 12

Rotational speed rev/min 1	Control rod travel mm 2 .	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,9+0,1	20,0-20,2	0,5(0,9)			
250	6,9-7,1	1,7-2,3	0,8(1,2)			
	_					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	g of slider ck ($\widehat{1}$	Full-load s Setting po		•	cifications (4)	Idle spec	_		cifications (5)	Torque o		3)
rev/min	Control rod travel mm 2)	r ev/m ın 3	Control red travel mm	Centrel rad travel mm 5	rev/min	rev/min 7	Control red travel mm	rev/min	Control rod travel mm	rev/min	Control rod Travel)
•			•	-		1195-1210 1285-1315 0-1,0	: _	•	-	•	-	44 (A) (A) (A) (A) (A) (A) (A) (A) (A) (A)	-
								0					

Torque-control travel on flyweight assembly dimension a

Speed regulat

Speed regulation At 1245-1250 min-1

f mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np 40°C (104°F)	Control rod stop	3 a	Fuel deliv	ery characteristics	36)	Starting f	uel delivery d 1 Control
rev/min 1	cm³/-1000 strokes 2	rev/min 3		rev/min 4	cm³/~1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes / mm 7
1150	200,0-202,0 (197,0-205,0)	•		•			•	-

Checking values in brackets

9.85

BOSCH

D14

Testoil-ISO 4113

WPP 001/4 MAN 20,9 s

1. Edition

RQ 250/1150 PA 739 PE 12 P 120 A 520/4 LS 3828 1-5-9-8-3-4-11-10-2-6-7-12 0-15-60-75-120-135-180-195-240-255-300-315° ±0,5° (±0,75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067 MAN-Nr. 2-7593

supersedes... company MAN D 2842 LE

Komb.-Nr. 0 401 840 724

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)7v1

		(4,15-4,55)		Lyle 12		
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,4+0,1	19,5-19,7	0,5 (0,9)			
250	6,9-7,1	1,7-2,3	0,8 (1,2)			
			·			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che		Full-load : Setting po	•	•	cifications (4		Idle speed regulation Setting point Test specifications 5				Torque control		
rev/min 1	Control rod Iravel mm 2	rev/min 3	Control rod travel rnm 4	Control rod travel rnrn 5	rev/min	rev/min	Control rod travel crorn 8	rev/min 9	Control rod travel mm 10	rev/min 11	travel		
550	19,2-20,8	550	20,0		1220-1235		7,0		min.8,5		11,4-11,5		
VH =	max. 46°			4,0	1415-1445				6,9-7,1 355=2,0	/50	11,4-11,6		

Torgue-control travel on flyweight assembly dimension a =

Speed regulation. At 1220-1235 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	O I man a pace a		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min	Control rad travel cm ³ /1000 strokes/ mm	
LDA 1150	1,0 bar 195,0-197,0 (192,0-200,0)	-	LDA 750 LDA 500	1,0 bar 200,0-206,0 (197,0-209,0) 0 bar 119,0-121,0 (116,0-124,0)	100 250	190,0-210,0 (186,0-214,0) 17,0-23,0 (14,0-26,0)	

Checking values in brackets

Test at n

500

rev/min increasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel difference
	Gauge pressure bar	Gauge pressure bar	mm (1)
PE 12 PLS 3828 + RQPA 739	1,0	0 0,30 0,52	11,4-11,5 8,9-9,0 9,2-9,3 10,7-11,0
	•		

Notes (1) when n

rev/min and gauge pressure =

bar (maximum full-load control rod travel)

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 SCA 11,0 v 4

2. Edition

PE 6 P 120 A 720 RS 7004

RO 750 PA 528-1

supersedes 9.84

company:

SAAB-SCANIA

DN 11

Komb.-Nr. 0 402 646 815

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Values only apply to test nozzle-and-holder assembly

1 688 901 019 and fuel-injection test tubing 1 680 750 015

A. Fuel injection Pump Settings

Port closing at prestroke

mm (from BDC).

		(4,95-5,15)				
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	10,6+0,1	15,5-15,7	0,6(0,9)			3,3 ± 0,1 ** 3,0-3,5)
** Due t new d	o smoothi elivery-v	ng of the seali alve holder mus	ng edge. t be adju	the sprin sted 70 2	g tension with ,9 - 3,1 mm.	a

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che		Full-load s	•	•	cifications (4)	Idle spec	•		cifications (5)	Torque d	(3)
rev/min	Control rod travel mm 2	rev/min 3	red transl rnm 4	Cantrel rad travel mm 5	rev/min	rev/min 7	Control red travel mm 8	rev/min	Control rod travel mm	rev/min	travel
	-	•	•	9,6 4,0 850	750-755 773-786 0-1,0	•	1	-	-	ı	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation: Z50-755 min-1

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	3	Starting f	uel delivery 6
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /~1000 strokes 5		rev/min 6	cm ³ /1000 strokes/ mm 7
700	155,0-157,0 (152,0-160,0)	•	Zul.	idle speed: Streuung: 4,0 (7,0)	,	100	240-290 = 20,0-21,0 mm RW

Checking values in brackets

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 19.9.1984
- Start of fuel delivery-engine: 18° before TDC
- Firing sequence, engine : 1-5-3-6-2-4

②

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 SCA 11,0 v 3

En_

PE 6 P 120 A 720 RS 7004

RQ 900 PA 528-2

supersedes 9.84

2. Edition

company Saab-Scania

engine. DN 11

Values only apply to test nozzle-and-holder assembly Komb.-Nr. 0 402 646 814 1 688 901 019 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

5,0-5,1 (4,95-5,15)

mm (from BDC)

Port closing at prest		4.95-5.15)	11.11 (11.0111.000)			
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	10,6+0,1	16,2 - 16,4	0,6(0,9)			3,3 [±] 0,1 (3,0-3,5) **
** Due to new de	smoothir ivery-va	g of the sealing of the holder must	g edge, ti be adjus	e spring ed 70 2,9	tension with a	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slid PRG check	der 1	Full-load s Setting po		-	cifications (4)	idle spec Setting p	-		cifications (5)	Torque o	(3)
rev/min travel			red travel	Centrel red travel mm 5	rev/min	rev/min 7	Control red travel rnm 8	rev/min 9	Control rod travel mm 10	rev/min 11	travel
-	-	•	1		900-905 934-948 0-1,0	ı	•	-	-	-	-

Torque-control travel on flyweight assembly dimension a =

mm

900-905 min Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor (delivery on control lever mp 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes / mm 7	
850	162,0-164,0 (159,0-167,0)	-	-	-	100	240,0-290,0 = 20,0-21,0 mm RW	
		-	High i	dle speed:			
			dis	persion 4,0 (7,0			

Checking values in brackets

8.85

BOSCH

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 19.9.1984
- Start of fuel delivery-engine: 18° before TDC
- Firing sequence, engine : 1-5-3-6-2-4

Testoil-ISO 4113

WPP 001/4 MB 14.7 a

1. Edition

supersedes

PE 8 P 120 A 320 LS 7801

RO 300/900 PA 762-2

Komb.-Nr. 0 402 648 819

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} + 0.5^{\circ} (+ 0.75^{\circ})$

Daimler-Benz company OM 442 LA engine

Values only apply to test nozzle-and-holder assembly

1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

5,2-5,3

Port closing at prest	roke (5, 15-5,35)	mm (from BUC)			
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	13,0+0,1	19,2-19,5	0,5 (0,9)			
300	5,9-6,1	1,2 - 2,0	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider ck	\sim 1	Full-load s Setting po		-		Idle spec	point		cifications (5)	Torque o	(3
rev/min 1	Control rod travel mm 2		rev/min 3	Control red travel rnrn 4	Control red travel mm 5	rev/min 6	rev/min 7	Control rad travel crom 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	19,2-20	8,	600	20,0	12,1 4,0 1150	940-955 1020-1050 0-1,5	300	5,9	300	min. 7,6 5,9-6,1 405= 2,0	600	12,7-12,9 14,1-14,2 13,1-13,3

on flyweight assembly dimension a = Torque-control travel

940-955 min Speed regulation A

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control fever pp 40°C (104°F)	Control rod stop (3a)	Fuel delive	ery characteristics	Starting f	tuel delivery d Control
rev/min 1	cm³/~1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min	cm³/1000 strokes / mm
LDA 900	0,75 bar 192,0-195,0 (189,0-198,0)	-	LDA 600 LDA 500	0,75 bar 209,0-211,0 (206,0-214,0) 0 bar 153,0-155,0 (150,0-158,0)	100	175,0 - 190,0 (171,0 - 194,0)

Checking values in brackets

8.85

BOSCH

D. Adjustment Test for Manifold Pressure Compensator

MB 14,7 a -

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure bar	Gauge pressure - bar	mm (1)
PE 8 P LS 7801	0	and the state of t	11,2 - 11,4
+ RQ PA 762-2		0,30	11,7 - 11,8
		0,45	13,3 - 13,5
			and the second section of the section of the s

Notes

(1) when n

rev/min and gauge pressure

barit - maximum full load control rod travel)

6

Test Specifications Distributor-type Fuel-injection Pumps

40

WPP 001/4 CUM 3,9 a 2

2. Edition

VE 4/12 F 1150 R 123-2

Overflow temperature 45° C

supersedes 4,85

0 460 424 008

DHK: 1 688 901 016/207 + 3 bar

company: Cullell 1115 engine: 4 BT-390 72 kW / 2300

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,3

 $m \pm 0,02 (0,04)$

ses VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	900	2,3 - 2,7 _{mm}		
1.2 Supply-pump pressure	900	4,8 - 5,4 bar (kgt/cm²)		
1,3 Full-load delivery with	-	- cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	900	86,5 - 87,5 cm ³ /1000 strokes		4,0 (4,5)
charge-air pressure 1.4 Idle regulation	375	24,5 - 30,5 cm ³ /1000 strokes		3,5 (4,5)
1.5 Full-speed regulation	1230	20,0 - 28,0 cm ³ /1000 strokes		
1.6 Start	100	min. 97,0 cm ³ /1000 strokes		
1.7 Load-dependent port-closing				

2. Test Spe	cincations	checking values in bro	ackets ()			
2.1 Timing device	n = rev/min mm	750 1,3-2,1 (1	,0-2,4)	900 (1,8-3,2)		100 ,0 (2,9-4,3)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,3-2,9	4,2	750 -4,8		100 5-6,2
Overflow delivery	n = rev/min cm ³ /10 s	400 55-138 (4	0-153)			150 3 (40-153)
2.3 Fuel deliveries				Charge-air press.	3. Dimen	SIONS for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		bar (kgf/cm²)	Designation	
End stop	1290 1230 1150 900 750 400	86,0-90,0	(19,0-29,0) (80,0-86,0) (84,0-90,0) (85,0-91,0) (83,7-91,3)		K KF MS SVS	5,1-5,4 1,4-1,6 4,2
switch-off					☆ K	20,2-22,2
					₹L	13,4-16,8
idie stop	450 375 300 130 200	max. 2,0 49,5-55,5 min. 97,0 max. 85,0	(22,5-32,5) (47,5-57,5)		Shutoff 375 min	check ELAB at 1
2.4 Solenoid	cut-in voltage	min.	10 Volt			

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.
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Test Specifications Distributor-type Fuel-injection Pu

WPP 001/4 PEU 1,9 b

6. Edition

VE 4/9 F 2300 R 162

Overflow temperature 45° C

supersedes 85 company.Peugeot engine: XUD 9

0 460 494 153 DHK 1 688 901 022/130 bar

Fuel injection test tubing 6x2x450 mm/1 680 750 073 All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

see VDT-W-460/...

the regulation A 550 2,5-3,5 cm ³ /1000 strokes B 2,0 (3,0 2,5 2,5 2,5 2,5 2,5 2,5 2,5 2,5 2,5 2,5	1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 6 Start 100 min. 44,0 cm ³ /1000 strokes 1.7 Load-dependent port-closing 1250 -	1 1 Timing device travel 1.2 Supply-pump pressure 1.3 Full-load delivery with charge-air pressure Full-load delivery without charge-air pressure 1.4 Idle regulation 1.5 Full-speed regulation 1 6 Start	1250 1250 - 1250 A 550 2400 100	3,9-4,5 - 29,5-30,5 2,5-3,5	bar (kgf/cm²) cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes	Dar (kgi/cm/)	2,5 (3,0)

2. Test Spe	cifications	checking values in brackets ()		
2.1 Timing device	n = rev/min mm	700 0,2-1,0 (0-1,3)	1250 (2,7-4,1)	2000 7,5-8,3 (7,2-8,6)	
2 2 Supply pump	n = rev/min bar (kgf/cm²)	700 2,3-2,9	_	000 -6,5	
Overflow delivery	n = rev/min cm³/10 s	700 42-83(27 - 98)		250 3 (40-153)	

2 3 Fuel deliveries			
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air pres bar (kgf/cm²)
End stop	2650 2500 2400 2250 2000 1250 700	max. 7,0 11,5-17,5 (10,5-18,5) (19,0-27,0) 30,0-32,0 (28,8-33,2) 30,5-32,5 (29,3-33,7) (27,8-32,2) 29,5-32,5 (28,0-34,0)	
switch-off	2300	0	
End stop	A 550 B 375 C 470 200 300	2,5-3,5 8,5-10,5 (5,5-13,5) 8,0-10,5 (5,5-13,0) min. 40,0	
e	cut-in volta	max. 35,0 min. 10 V	

rated voltage 12 V

3. Dimens	ions				
Designation	tor assembly and adjustment mm				
к	3,2-3,4				
KF	5,7-6,0				
MS	1,3-1,5				
svs	3,0				
x _K	18,9-20,9				
xr.	11,8-15,2				
Observations *Residual delivery setting idle setting (LFG) as per VDT-I-460/135					

Test Specifications Distributor-type **Fuel-injection Pumps**

WPP 001/4 FIA 1,7 i

1. Edition

VE 3/11 F 1200 L 163-3

Took Considerations

Overflow temperature 45° C

supersedes company: Fiat

engine: 8035-05-265

0 460 413 005 Fuel injection test tubing 1 688 901 020/172 +3 bar

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

mm $\stackrel{+}{=}0.02(0.04)$ 0,2 Pre-stroke setting

Charge-air press. bar (kgf/cm²) Difference in Rot. speed rev/min 1. Settings delivery cm³ 3,2-3,6 800 mm 1.1 Timing device travel 4,2-4,8 800 bar (kgf/cm²) 1.2 Supply-pump pressure cm³/1000 strokes 1.3 Full-load delivery with charge-air pressure 3,5 800 62,5-63,5 cm3/1000 strokes Full-load delivery without charge-air pressure 3,5 13,0-17,0 350 cm³/1000 strokes 1.4 Idie regulation 15,0-21,0 1350 cm³/1000 strokes 1.5 Full-speed regulation min. 90 100 cm³/1000 strakes 1.6 Start 1.7 Load-dependent port-closing

2.1 Timing device	n = rev/min	500		800	1100	
i. I stilling covice	mm	0,8-1,4 (0,4-		7-4,1)	5,7-6,5 (5	,4-6,8)
2.2 Supply pump	n = rav/min bar (kgf/cm²)	500 2,9-3,5		1100 ,5-6,1	1200 6,0-6,6	
Dvertiow delivery	n = rev/min cm ³ /10 s	500 41-83 (26-98)			1200 55-138 (40-	
2.3 Fuel deliveries					3. Dimen	for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm ² /1000 strokes		Charge-air press bar (kgf/cm²)	Designation	and adjustment mm
End stop	1400 1350 1300 1200 -800 500	max. 2,0 37,5-44,5 (3 56,0-59,0 (5 59,5-62,5 (5	13,5-22,5 36,5-44,5) 54,8-60,2) 50,3-65,7 57,6-64,4)		K KF MS SVS	- 5,2-5,5 1,5-1,7 4,0
switch-off	1400	0			•	
idle stop	420 380 350	max. 2,0 3,0-9,0 (1,5-10,5) 10,5-19,5)		Observations	
End stop	150 250	mon. 100 max. 65				-
2.4 Solenoid	cut-in volta	min. 10, rated voltage 1				

estoil-ISO 411

VE 4/8 F 2300 R 171

Overflow temperature 45° C

supersede Peugeot company: XUD 7

0 460 484 010 DHK 1 688 901 022/130 bar

Fuel injection test tubing 6x2x450 mm/1 680 750 073 All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting mm

1. Settings	Rot. speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1250	3,8- 4,2	mm		
1.2 Supply-pump pressure	1250	4,3- 4,9	bar (kgf/cm²)		
1.3 Full-load delivery with	-	-	cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	1250	29,5-30,5	cm ³ /1000 strokes		2,5(3,0
charge-air pressure 1.4 Idle regulation	A 550	3,5- 4,5	cm³/1000 strokes		B 2,0(3,0
1 5 Full-speed regulation	2400	19,0-25,0	cm ³ /1000 strokes		
1.6 Start	100	min. 42,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	1250				

2. Test Spe	cifications	checking values in brackets ()	
2.1 Timing device	n = rev/min mm	700 0,2-1,0(0-1,3)	1250 (2,9 - 4,3)	2000 7,5-8,3(7,2-8,6)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	700 2,8-3,4		2000 6,4-7,0
Overflow delivery	n = rev/min cm ³ /10 s	700 42-83(27 - 98)	an paddin wydai galliffedd daeth a daeth a gaell y fae a fae a fae a fae a fae a fae a fae a fae a fae a fae a	2250 55-138(40-153)
2 3 Fuel deliveries	ada e disconominação está distá debite son a vert estada.			3. Dimensions for assembly and adjustment
Speed control lever	Rot. speed	Fuel delivery	Charge-air press	Designation mm

Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)
End stop	2650	max. 7,0	
	2500	11,5-17,5 (10,5-18	.5)
	2400	(18,0-26	
	2250	28,0-30,0 (26,7-31	
	2000	29,0-31,0 (27,7-32	
	1250	(27,7-32	,3)
	700	29,5-32,5 (28,0-34	,0)
switch-off	2300	0	
Idle stop	A 550	3,5 - 4,5	
	B 350	8,0 -12,0 (6,0-14,	0)
	C 470	8,0 -12,0 (6,0-14,	
End stop	200	min. 44,0	
	300	max. 34,0	
2 4 Solenoid	cut-in voltage	min 10 V	*

3. Dimen	SIONS for assembly and adjustment mm
К	3,2-3,4
KF	5,2-5,5
MS	1,3-1,5
svs	max. 3,0
ХK	18,9-20,9
x _r	12,2-15,6
Observations	1.4-12

Residual delivery setting idle setting

(LFG) as per VDT-I-460/135

rated voltage 12 V

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 PEU 2,1 f 2. Edition

VE 4/9 F 2250 R 174 0 460 494 154

Overflow temperature 45° C

DHK: 1 6 88 901 022 / 130+ 3 bar

Fuel injection test tubing 6 x 2 x 450 mm

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

supersedes PSA-Mahindra XD 4/90

engine:

Test Instructions and Test Equipment

see VDT-W-460/...

78-Stroke Setting	(146)				and the same of the same of the same of
1. Settings	Rot. speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
	1500	3,8-4,2	mm		
1.1 Timing device travel 1.2 Supply-pump pressure	1500	5,5-6,1	bar (kgi/cm²)		
1.3 Full-load delivery with charge-air pressure Full-load delivery without	1500	31,0-32,0	cm³/1000 strokes		2,5(3,0)
charge-air pressure 1.4 Idle regulation	350	7,0-11,0	cm³/1000 strokes		2,0(3,0
f.5 Full-speed regulation	2400	11,0-17,0	cm ³ /1000 strokes		
1.8 Start	100	min. 50	gm³/1000 strokes		
1.7 Load-dependent post-closing	-	- 1			

2. Test Spe	ecifications	checking values in brackets ()	
2.1 Timing device	्रीत = rev/min लक्ष	1000 1,6-2,4 (1,3-2,7)	1500 (3,3-4,7)	2200 6,4-7,2 (6,1-7,5)
2. a Supply purity	n ≃ rev/min bar (kg&cm²)	400 2,0-2,6	220 7,4	=
Overiflow delfuery	n = rev/min cm ³ /10 s	Y.	225 55-138 (
2 3 Fuel deliveries				3. Dimensions

			33-100 (
2 3 Fuel deliveries			
Speed control lever	Rot speed	Fuel delivery cm³/1000 strokes	Charge-air press. bar (kgf/cm²)
End stop	2500 2400 2350 2200 2000 1500 1000 500	max. 4,0 (10,0-18,0 21,0-27,0 (20,0-28,0 34,0-37,0 (32,8-38,2) 33,5-36,5 (32,3-37,7) (28,8-34,2 29,7-32,7 (28,2-34,2 30,8-33,8(29,5-35,3)	
switch-off			
Idle slop	350 400 550	(5,0-13,0) max. 4,0 max. 1,0	
End stop	350 450	miri 40 min. 44	
2.4 Solenoid	cut-in volts	min. 10 V rated voltage 12 v	

2250) 10-153)	
T	3. Dimen	101 0236111613
55.	Designation	and adjustment mm
	K KF MS SVS	3,2-3,4 5,7-6,0 1,2-1,4 2,5
-	xĸ	20,2=22,?
	XI,	12,0-15,4
	Observations	

WPP 001/4 STE 2,3 b 1

1. Edition

PES 3 A 75 D 310 RS 1215

RSV 250-900 A7B 719 DL

supersedes -

Steyr company WD 308 S

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,45-2,55 (2,40-2,60)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm1/100 strokes 3	Cm ⁻¹ / 100 strokes	Control rod travel mm	Fuel delivery cm*/100 strokes	Spring pre-tensioning (forque-control valve) mm
1000	9,0+0,1	3,9-4,2	0,4			
200	9,0	1,8-2,4				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed Control rod travel mm				Control- lever deflection in degrees 7	Lower rated speed Control rod travel mm 8 9		Torque control Control rod travel rev/min mm 10 11		
ca. 60	950 950 980		without auxiliar spring			ca. 25	250 100	6,0 19,0-21,0	880 850 350	0 0,1-0,3 0,2-0,4
2a	950 1000 1070	8,4-11,0 3,1-5,1 0,3-1,0	with sprir	auxil Ig	iary		250 400 550	5,7-6,3 1,3-3,7 0-1,0		,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	Speed limitar			uel delivery naracteristics	Starting (
Test oil to rev/min 1	cm ¹ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes	rev/min	cm/1000 strokes 7	rev/min 8	Control rod travel mm	
900	61,0-63,0	930-940			100	16,0-16,6 mm RW			

Checking values in brackets

* 1 mm less control rod travel than col 2



40

WPP 001/4 STE 3,1 b

1. Edition

En

PES 4 A 75 D 410 RS 1215 Komb.-Nr. 0 400 474 152 RSV 250-900 A7B 719 DL

company Steyr WD 408 S

estoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,45-2,55
Port closing at prestroke (2,40-2,60)

mm (from BDC)

closing at prestroke (2,40-2,60)

Rotational speed rev/min	Control rod travel	Fuel delivery cm /100 strokes 3	Difference cm ^{-y} 100 strokes 4	Control rod travel min 2	Fuel delivery cm /100 strokes 3	Spring pre-tensioning (forque-control valve) mm 6
900	11,5+0,1	5,9-6,0	0,25(0,4)			
250	5,4-5,6	1,0-1,6	0,2(0,35)			

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of confice lever	r rated speed Control rod travel mm		Interm	Intermediate rated speed 4 5 6		Control- lever deflection in degrees		rated speed Control rod travet rnm rev/min 9 10		rque control Control rod travel mm
loose	800	0,3-1,0	1	-	•	ca. 25	250 100	5,5 min.19,5	900 500 750	11,5-11,6 11,7-11,9 11,7-11,9
ca. 60	10,5 4,0 1100	930-940 965-995 0,3-1,7					250 405-46	5,9-6,1 5=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(A)	emp 40°C (104°F)	6 Rotational- speed limitat	speed limitat Characteristics			Starting fuel delivery 5		
rest on to	cm 11000 strokes	changed to 3 rev/min 3	rev/min	cm /1000 strokes 5	rev/min	cm/1000 strokes 7	rev/min 8	travel mm 9
900	58,5-59,5 (57,0-61,0)	-	-	-	100	84,0-94,0 81,0-97,0)		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

WPP 001/4 MWM 5,9 a 2

En 1. Edition

PES 6 A 80 D 320 RS 1271 Komb.-Nr. 9 400 085 238

K31 3

RSV 350-1400 A 2 B 2196 R

supersedes

company

MWM U 229-6

engine

127,0 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,2-2,3 (2,15-2,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm*/100 strokes 3	Difference cm ^{-y} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm//100 strokes 3	Spring pre tensioning (forque-control valve) mm 6
1380	9,5+0,1	5,3 - 5,4	0,25(0,4)			
350	6,9-7,1	0,8 - 1,1	0,2 (0,35)			

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed 6	Control- lever deflection in degrees 7		rated speed Control rod travel mm	1 9	rque control Control rod travel mm
loose	800 X =	0,3-1,0 5,5	-	-	-	ca. 21	100	6,5 min.19,0	1380 500	9,5- 9,6 10,9-11,0
ca.54	8,5 4,0 1650	1420-1430 1470-1500 0,3-1,7					350 640 - 850	6,9-7,1 700 =2,0 max. 1,0	800 1100	10,7-10,9 10,0-10,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational Sa Fuel delivery characteristics			Starting t	fuel delivery 5	4a Idle stop		
Test oil to rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min	rev/min	cm //1000 strokes 5	rev/min	cm/1000 strokes 7	rev/min 8	Control rad travel mm 9	
1380	52,5 - 53,5 (51,0 - 55,0)	1420-1430*	800	54,0 - 56,0 (52,0 - 58,0)	100	19,0-21,0 mn RW	-	_	
500	52,0 - 54,0 (50,0 - 56,0)		1100	54,5 - 56,5 (52,5 - 58,5)					

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

and Governors

WPP 001/4 MB 8,7 1

3. Edition

Testoil-ISO 4113

PE6A90D410RS2124

RO 450/1250 AB 812

supersedes 1.83 company Daimler-Benz OM 360

141 kW (192 PS)

Komb.-Nr. 0 400 646 229

1 - 5 - 3 - 6 - 2 - 4 $0 - 60 - 120 - 180 - 240 - 300^{\circ} \pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30) Port closing at prestroke mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,2+0,	8.6 - 8.7	0,3(0,45)		
450	5,9-6,1	1,2-1,8	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkine PRG che rev/min	Control rod	①	Full-load s Setting po rev/min 3	central	Test spec Central red travel	rev/min	Idle spec Setting p rev/min 7	coint Central red travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (1) rev/min mm 11	
700	15,6-16	,4	700	16,0		1295-1310 1345-1375	•	6,0	100 450 600 500	min. 7,5 5,9-6,1 0 - 1,0 540=2,0	-	•	

Torque-control travel on flyweight assembly dimension a =

1295-1310 min

1 mm tess control

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d Gontre
revimin	cm³/-1000 strokes	rev/min 3	rev/min 4	cm³/~1000 strokes	rev/min	cm³/1000 strokes / mm
1250	86,0 - 87,0 (84,0 - 89,0)	800	800	80,0 - 83,0 (78,0 - 85,0)	100	115,0-125,0 (112,0-128,0) = min. 16,0 mm RW

Checking values in brackets

WPP 001/4 MB 8,7 c 3 3. Edition

PE 6 A 90 D 410 RS 2124 X Komb.-Nr. 0 400 646 151

RQ 300/1275 AB 658 DL

supersedes 11.84 company Daimler-Benz OM 360 125 kW (170 PS)

Festoil-ISO

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm	(from	BDC)

Rotational speed rev/min 1	Control rod trav al mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	9,3-9,4	7,7 - 7,8	0,3(0,45)			
300	6,1-6,3	0,9 - 1,5	0,2(0,4)		:	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider ock	Full-load : Setting po	•			Idle speed regulation Setting point Test specifications 5				Torque control		
rev/min 1	Control rod travel mm 2	rev/min 3	Control red travel mm	Control red travel rmm 5	rev/min 6	rev/min 7	Centrel rad travel mm 8	rev/min 9	Control rod	rev/min †1	Control rod (travel)	
700	15,6-16,4	700	16,0	8,3 4,0	1295-1310 1345-1375	300	5,0	300 350-3	min. 6,5 4,9-5,1 90 = 2,0 max. 1,0	1250 500 850 1040	9,3-9,4 10,1-10,2 9,8-10,0 9,4-9,7	

Torque-control traval on flyweight assembly dimension a =

Speed regulation At 95-1310 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np 40°C (104°F)	2	Centrol rod stop	3	Fuel delivery characteristics			Starting f		6
rev/min 1	cm ³ /-1000 strokes 2		rev/min 3		rev/min 4	cm³/-1000 strokes 5		rev/min 6		Trave
1250	77,0-78,0 (75,0-80,0)		450		500 800	69,0-72,0 (67,0-74,0) 77,0-80,0 (75,0-82,0)		100	min. 16,0 m	n

Checking values in brackets

7.85

Geachaftsbereich KH. Kundendienst. Klz-Ausrüstung £. 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 9,7 m 1 2. Edition

n

PES 6 A 95 D 420 LS2328

RQ 200/1100 AB782DR

supersedes 3.76

All D 2356 HMXU engines must, when repairing, be changed to D 2356 HMYU in accordance with test specifications below.

company MAN
engine D 2356 HMYU*
(220 PS)*

Komb.-Nr. 0 400 846 239

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.0 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7.5 - 8.0	0,5			
	6	3,2 - 4,2				
200	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	ck Control rod travel	Full-load s Setting po rev/min 3	•	•		Idle spec Setting p revimin 7	Control red travel rmm	Test spe	cifications 5 Control rod travel mm	Torque o rev/min 11	Control rod
600	15,7-16,3	600	16,0	1120 1150 1180 1240	15,6-16,0 9,0-14,2 0 - 10 0	550	0	100 200 300 450	6,6-8,1 5,4-7,3 3,3-5,3 0	•	-

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	relivery on control lever np. 40°C (104°F)	Control rod stop (3a)	Fuel deliv	ery characteristics 3b	Starting for Idle spee	Contret
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/~1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes/mm 7
1100	125,5 - 127,5 (123,5-129,5)	500	800	1250-128,0 (123,0-130,0)	100	14,0-14,4 mm RW
			500	max. 122,5 (max. 124,5)	500	6,5 mm

Checking values in brackets

3.85

and the state of

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. C. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany imprime en République Fédérale d'Allemagne per Robert Bosch GmbH.

1. Edition

PES 5 A 95 D 410 RS 2417 Komb.-Nr. 0 400 845 081

RQV 300-1250 AB 1211 L

supersedes -

company: KHD

engine F 5 L 413 FR

88 kW/2500 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Control rod

10,0+0,1

6,4-6,6

mm

Rotational speed

rev/min

1250

300

1,9 - 2,0
Port closing at prestroke (1,85-2,05) mm (fr

(1,85-2,05)	mm (nom bDC)			
Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
3	4	2	3	6
9,9-10,1	0,35(0,6)			
1,0-1,6	0,35(0,55)	l.	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed	•	Intermediate	rated sp	eed	Lower rated	speed	_	Sliding	leeve travel
	rev/min Control rod travel mm	Control rod (a) travel mm (28)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	0
1	2	3	4	5	6	7	8	9	10	11
max.	1280	15,2-17,8	-	-	-	ca. 18°	300	5,7-5,9	250	1,0-1,2
ca. 54	9,0 4,5 1500	1290-1300 1350-1380 0-1,0				365-480			500 1000 1250	3,2-3,5 6,2-6,4 8,3
						③				

Torque control travel a = 0,20 mm

C. Settings for Fuel injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b Fuel of limitation intermediate speed		very characteristics 5e	idie	fuel delivery 6	Torque- travel	Control 5	
rev/min 1	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm	
1250	99,0-101,0 (97,0-103,0)	1290-1300*	600	91,5-94,5 (89,0-97,0)	100	120,0-130,0 =14,2-14,6 mm RW	1250 600 715 765	10,0+0 10,2+0 10,1-0	

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung C by Robert Bosch GmbH. D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany Imprime en Republique Fédérale d'Altemagne par Robert Bosch GmbH. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 OMB 4,4 a

2. Edition

En

PES 4 A 90 D 410 RS 2442 RQ 275/1300 AB994L Komb.-Nr. O 400 844 070 Control switch must light up at n = 1480-1490

supersedes 10.77

company OM-Brescia C03/130

81 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.10-2.30)

mm (from BDC)

		2,10 2,007				
Rotational speed	Control rod travel	Fuel delivery	Difference cm ¹ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm 1/100 strokes	100 strokes	mm	cm ¹ /100 strokes	rom
1	2	3	4	2	3	6
1300	11,7+0,	8,1 - 8,2	0,2(0,35)			
275	8,3-8,5	1,5 - 2,1	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider						Torque control				
	Control rod	Setting p	Control rod travel	Test spe	cifications Control rod travel	Setting p	Control rad travel	Test spe	Control rod travel	rev/min	Control rod travel
rev/min 1	2	rev/min 3	mm 4	5	mm 6	7	8	9	10	11	12
900	15,6-16,4	900	16,0	10,7 4,0 1600	1470-1500		8,5		min.10,2 8,6-8,8 760 =2,0		11,7-11,8 12,2-12,4

Torque control travel on flyweight assembly dimension a

mm

Speed regulation 1345-1360 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np 40°C (104 F)	Control rad stop	Fuel deln	ery characteristics	Starting	Starting fuel delivery		
rev/min 1	cm ¹ /-1000 strokes 2	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min	cm ³ /1 000s trokes 7		
1300	80,5 - 81,5 (78,5 - 83,5)	-	650	79,5 - 82,5 (77,5 - 84,5)	100	120,0-133,0 (117,0-133,0) = 16,9-17,5 mm Ri		

Checking values in brackets

4.85

BOSCH

WPP 001/4 TAM 12,7 a

1. Edition

ROV 300-1150 AB 1045-1 L PE 8 A 95 D 410 LS 2451 1 - 8 - 7 - 2 - 6 - 5 - 4 - 3 je $45^{\circ} \div 0.5^{\circ} (\div 0.75^{\circ})$ supersedescompany TAM F 8 L 413 F 173 kW/2300 min⁻¹

Komb.-Nr. 0 400 648 143

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(1,95-2,15)	mm (from BDC)			
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	9,3-9,4	8,6-8,8	0,3(0,6)			
300	5,9-6,1	1,4-2,4	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in a

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travei
deflection	rev/min Control	Control rod travel	Degree of deflection		Control rod travei	Degree of deflection		Control rod travel	, ①	
	rod travel mm	mm rév/min 2s	af control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1200	15,2-17,8	-	-	-	ca. 16		min.7,5	200	0,7-0,9
ca. 46	8,3	1190-1200					300	5,9-6,1	600 850	3,9-4,1 6,9-7,1
	4,0	1225-1255							1200	8,4
1	1350	0-1,0				330-449	ł			
						3				

Torque control travel a = 0.40 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed 2b limitation intermediate speed	Fuel delic high idle s	very characteristics 5a	Starting Idle switching		Torque- travel	Control roo
rev/min	cm³/1000 strokes	rev/min 44	rev/min	cm ³ /1000 strokes	rev/min	cm ¹ /1000 strakes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1150	86,0-88,0 (84,0-90,0)	1190-1200*	1000	86,5-89,5 (84,5-91,5)	100	116,5-126,5 (113,5-129,5)	500	9,3+0,1 9,7+0,1 9,6+0,2
			700	86,5-89,5 (84,5-91,5)		_		9,4+0,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testcil-ISO 4113

Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 11,1 g 1

2. Edition

(1)

PES 6 A 95 D 410 LS2485Z

RQ 250/1100 AB839DL

supersedes 8,77 MAN company:

LS2485Y

RQ 250/1100 AB839DL (2)

D 2566 .. engine

LS2485Y

RQ 250/1100 AB965DL (3)

(1- 220 PS) **MSFV**

(2- 220 PS) MFO/MFOR (3- 200 PS) MFO/MFOR

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

Rotational speed Control rot travel rev/min mm 1 2		Fuel delivery Z, Y + 839DL cm³/100 strokes 3	Difference cm³/ 100 strekes 4	Control rod travel mm 2	Fuel delivery Y + 965DL cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,2+0,	11,2 - 11,4	0,3(0,6)	10,0	10, 1 - 10, 3	
250	5,9-6,1	1,1- 1,7	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

+ 839DL (1)

			Full-load (•	-		Idle speed regulation Setting point Test specifications (5)			Tarque control		
	Control rod	٠	rev/min	Control red travel rnm	Central red travel critti	rev/min	rev/min 7	Centrel red travel mm 8	rev/min	Control rod	rev/min	Control rod travel
600	15,6-16	,4	600	16,0	10,2 4,0 1300	1145-1160 1175-1205 0 - 1,0		6,0	100 250 340- 500	min. 7,5 5,9-6,1 100 = 2,0 max.1,0	800	11,2-11,3 11,5-11,6 11,5-11,7
	ontrol travel			0.2				11	45-1	160 min 1		1 mm less contr

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor c	d delivery on or control lever (104°F) Control rad stop		Fuel deliv	ery characteristics	Contro		
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7	
1100	112,0 - 114,0 (110,0 - 116,0	-	800 500	114,5 - 117,5 (112,5 - 119,5) 111,0 - 114,0 (109,0 - 116,0)	100 250	114,0=120,0 (111,0=125,0) 6,0	
		-		(107,0 110,0)			

Checking values in brackets

control	Torque	Idle speed regulation Setting point Test specifications				cifications	-	•	Checking of slider Full-load speed r Setting point		
Control rod travel mm 12	rev/mir 11	Control rod travel	i .	Control red travel rmm 8	rev/min 7	Control rod travel	· .	Cantrol rad travel mm	rev/min	Control rod travel mm 2	rev/min
11,2-11,3		5,9-6,1	250			1145-1160	_	16,0	600	15,6-16,4	600
11,5-11,6	800	400 = 2,0 0 - 1	340- 500	:	4	1175-1205	4,0			Breakway 0 - 1	1100 1300
1	1100	min. 7,5 5,9-6,1 400 = 2,0	100 250 340-	6,0			10,2	16,0		15,6-16,4 Breakway	1100

Torque-control travel on flyweight assembly dimension a =

0,2 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	lelivery on control lever mp. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting fuel delivery		
rev/min cm³/-1000 strokes		rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /100 strokes 7 mm RW	
1100	112,5 - 114,5 (110,5 - 116,5)		800	114,5 - 117,5 (112,5 - 119,5)	100 250	13,0-13,6 6,0	
			500	110,5 - 113,5 (108,5 - 115,5)	250	0,0	

Checking values in brackets

B. Governor Settings

Y + 965DL (3)

			1				Idle speed regulation				Torque control	
rev/min	Control rod	Setting por rev/min 3	Central red travel rnm 4		cifications Control rod travel mm 6		Control red travel		cifications Control rod travel mm 10	rev/min 11	Control rod travel mm 12	
600	15,6-16,4	600	16,0	9,0 4,0			6,0		min.7,9 6,3-6,5	-	•	
1100 1300				,	1100-1210			360-4 500	20 = 2,0			

Torque-control travel on flyweight assembly dimension a =

Λ mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop Fuel delivery characteristics			Starting fuel delivery		
rev/min	cm ³ /-1000 strokes	rev/min rev/min		cm³/-1000 strakes 5	rev/min	cm³/100 strokes	
1100	99,5 - 101,5 (97,5 - 103,5)		500	86,5 - 91,5 (84,5 - 93,5)	100 250	13,6-14,2 6,0	

WPP 001/4 MAN 9,2 d

Edition

PES 5 A 95 D 410 LS2488

RQ 250/1100 AB839D (1) supersedes 5.84 company:

LS2488Y

RQ 250/1100 AB839D (2)

D 2565 M/MF

Komb.-Nr. 0 400 845 028 (1) MAN-Nr. 7724 C 400 845 036 (2) MAN-Nr. 7844

En

(i) 141 kW/2200 min⁻¹ (:) 123,5 kW/2200 min

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(45-1.65)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,2+0,	1 11,8 - 12,0	0,3(0,6)	9.9+0.1	10,0 - 10,3	
250	5,9-6,1	1,4- 1,9	0,3 (0,5) 5,9-6,1	1,1- 1,7	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1)

Checking PRG che	g of slider ck Control rod	∼ 1	Full-load s Setting po		_		Idle spec Setting p			cifications 5	Torque d	Control rod
rev/min	travel	10	I		red travel mm 5	rev/min 6	rev/min 7	red travel	rev/min 9	travel mm 10	rev/min 11	travel mm 12
600	15,6 · 16,	4	600	16,0	1100 1150 1200 1250	15,1-15,4 9,0-14,0 0 - 7,2 0 - 1,5		0	100 200 300 500	6,9-8,1 5,6-7,6 3,3-5,5 0 - 1		15,8-16,0 15,3-15,5
	catcal travel	. 		0.2	L			1	145 -	1160 =	L	1 mm less contre

Torque-control travel on flyweight assembly dimension a =

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rad stop 3a	Fuel delivery characteristics		Starting fuel delivery Idle speed		
rev/min	cm ³ /~1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rad travel cm ³ /1000 strokes / mm 7	
1100	117,5 - 119,5 (115,5 - 121,5)		800 500	116,5 - 120,5 (114,5 - 122,5) 114,5 - 108,5 (112,5 - 120,5)		116,5 - 126,5 = 13,7-14,3 mm RW	
						./.	

Checking values in brackets

B. Governor Settings

RQ.. 839DL + 2488Y

Checkin	g of slider	Full-load	speed re	gulation		idle spe	ed regul	ation		Torque control	
rev/min	Control rod travel mm 2	Setting p rev/min 3	oint Control rad travel mm 4	Test spe rev/min 5	cifications Control rod travel mm 6	Setting rev/min 7	Control rad travel	Test spe rev/min 9	cifications Control rod trave! mm	rev/mir	Control rod travel mm 12
600	15,6-16,4	600	16,0	1100 1150 1200 1250	15,1-15,4 9,0-14,0 0 - 7,2 0 - 1,5	540		200	6,9-8,1 5,6-7,6 3,3-5,5 0 - 1		15,8-16,0 15,3-15,5

Torque-control travel on flyweight assembly dimension a =

0,2 mm

Speed regulation: At 1145 - 1160 =

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting fuel delivery		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1002strokes 7	
1100	99,0 - 101,0 (97,0 - 103,0)		800 500	100, 5 - 104, 5 (98, 5 - 106, 5) 95, 0 - 99, 0 (93, 0 - 101, 0)	100 250	119,0 - 124,0 6,0 mm RW	

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

g of slider	Full-load	speed re	gulation		idle spec	•			Torque d	ontrol
Control rod travel mm 1		Central rad travel mm	Control rod travel mm		Centrel red travel mm		Control rod travel rev/mm mm		rev/min	Control rod travel mm 12
						-				
	Control rod travel mm	Control rod travel mm rev/min	Control rod travel mm rev/min mm	Control rod travel mm rev/min rev/min	Setting point Control rod travel mm Setting point Control Control rod red travel mm Test specifications Control rod travel travel mm rev/min	Control rod travel mm rev/min rev/min rev/min Setting point Control cod travel mm rev/min rev/min rev/min rev/min	Setting point Test specifications Setting point Control rod travel rev/min mm rev/min mm rev/min mm rev/min mm	Control rod travel mm rev/min mm rev/min rev/m	Setting point Test specifications Setting point Control rod travel mm rev/min mm rev/min Test specifications Setting point Control rod travel rev/min mm rev/min mm rev/min mm rev/min mm rev/min mm rev/min mm rev/min mm	Setting point Test specifications Setting point Control rod travel rev/min mm rev/min mm rev/min mm rev/min re

Torque-control travel on flyweight assembly dimension a =

mn

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting t	uel delivery
rev/min cm³/-1000 strokes		rev/min 3	rev/min	cm³/-1000 strokes	rev/min 6	cm ³ /100 strokes 7

WPP 001/4 MAN 11,1 i

2. Edition

PES 6 A 95 D 410 LS 2489 Komb.-Nr. 0 400 846 377

RQ 250/1100 AB 965 DL

supersedes2.76 company: MAN

D 2566 MXUM/UH 213 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,2+0,1	12,7-12,9	0,3 (0,6)			
250	6,0-6,2	0,9-1,3	0,3 (0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che rev/min 1	ck Control rod I travel	Setting point Co rec	eed regulation It Test spi Central Ind travel Inm 5	rev/min	Cu	int Test spe entrel ed travel	cifications 5 Control rod travel	Torque o	Control rod (3)
600	15,6-16,4	600 1	6,0 11,2 4,0	1145-1160 1185-1215		6,0 100 250 330-	min. 7,5 5,9-6,1 370 = 2,0	1100 500	12,2-12,3 12,2-12,4

Torque-control travel on flyweight assembly dimen.

Speed regulation: At 1145-1160 min-1

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor o Test oil ter	elivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	tuel delivery 6
rev/min 1	cm ³ /~1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	red travel cm ³ /1000 strokes / mm 7
1100	126,5-128,5 (124,5-130,5)	-	500	max. 121,5 (max. 123,5)	100	116,5-126,5 (113,5-129,5)

Checking values in brackets

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 11,1 i 1

1. Edition

En

PES 6 A 95 D 410 LS 2489 Z

RQ 250/1100 AB 965 D

supersedes...

company MAN

engine. D 2566 MUH/M

155 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prest	troke (1,5-1,6 1,45-1,65)	mm (from BDC)			
Rotational speed Control rod travel rev/min mm 2		Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,1+0,1	10,3-10,5	0,3 (0,6)			
250	5,9-6,1	1,2-1,8	0,3 (0,5))		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Checking of slider PRG check Control rod Setting point			Test spec	cifications (4)	Idle speed regulation Setting point Test specifications 5				Torque d	(3)
rev/min	Control rod travel mm 2	rev/min	Centrel red travel rmm	Central rad travel mm 5	rev/min 6	rev/min 7	Control red travel rnm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,4	600	16,0	1140 1180 1220 1260	15,6-16,0 6,6-12,8 0-7,0 0		0		7,0-8,1 5,3-7,5 2,4-4,6 0	-	•

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At 1145-1160 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop	3 a	Fuel deliv	ery characteristics	3 b	Starting f	d Contrel
rev/min 1	cm ⁴ /-1000 strokes	rev/min 3		rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes-/ mm 7
1100	101,5-103,5 (99,5-105,5)	•		500	88,5-92,5 (86,5-94,5)		100 250	111,0-119,0 6,0 mm RW

Checking values in brackets

40

WPP 001/4 KHD 4,1 c 6

1. Edition

PES 4 A 80 D 410 RS 2523 Komb.-Nr. 9 400 093 229 RSV 325-1075 A1B 1111 DL

supersedes Deutz Argentinien Company F 4 L 913

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(1.85-2.05)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm1/100 strakes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre tensioning (torque-control valve) mm 6
1075	10,2+0,1	6,0-6,1	0,25 (0,4)			
325	6,4-6,6	0,6-0,9	0,2 (0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speeg		Intermediate rated speed			(4)	Lower	3 Torque control		
Degree of deflection	Control rod, travel	Control rod travel				Control- lever	1	Control rod travel		Control rod travel
of control lever	mm 2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	9 n;m	rev/min 10	mm 11
loose	800	0,3-1,0	-	•	-	ca. 32	325	6,0	1075	
	x = 6,25						100 325	min. 19,0 6,4-6,6	500 750	11,0-11,1 10,5-10,8
ca. 65	9,2 4,0 1300	1115-1125 1160-1190 0,3-1,7					510-57			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	ill-load stop	6 Rotational- speed limitat		uel delivery paractenslics	Starting idle	Starting fuel delivery 5 4a idle st		
Test oil to rev/min 1	emp 40°C (104°F) cm ¹ /1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes	rev/min	cm v1000 strokes 7	rev/min B	Control root travel mm
1075	60,0-61,0 (58,5-62,5)	1115-1125*	500 750	60,0-62,0 (58,0-64,0) 58,0-60,0 (56,0-62,0)	100	19,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

12.85

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

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WPP 001/4 DAF 8,3 k 8 . Edition

<u>En</u>

PE 6 A 95 D 410 RS 2525

RQ 225/1200 AB 1007 L

supersedes 1.85 company. DAF

engine

DHR 825

Values apply to fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at prestroke

2.00-2.10

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,6+0,1	10,8 - 11,0	0,35(0,6)		
225	5,7-5,9	0,7-1,2	0,35(0,5)		
Port closin travel 9 m	F I	nce between con . 3 - 4° ca	trol-rod mshaft			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control red	,	Full-load Setting po rev/min 3			cifications (4) rev/min 6	Idle spec Setting p rev/min 7	Control Control red travel		cifications 5 Control rod travel mm	Torque d rev/min 11	Control rod
650	19,2-2	8,0	650	20,0	11,6	1230-1245	225	5,8	100		1000 1200	12,6-12,7 12,5-12,7
VH =	max. 4	6°			4,0 1390	1315-1345 0 - 1,0				5,7-5,9 80 = 2,0 max. 1,0		

Torque-control travel on flyweight assembly dimension a =

mm

1230-1245 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor o Test oil ter	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fi	uel delivery 6
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel crn ³ /1000 strokes:/ mm 7
LDA 1000	0,7 bar 109,0 - 110,0 (107,0 - 112,0)	·	LDA 600	0 bar 85,5 - 86,5 (83,5 - 88,5)	(120,0-130,0 117,0-133,0) = 19,5-21,0 mm RW

Checking values in brackets

10.85

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung. C. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuftgarf 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

DAF C. A

Testatn -

1000

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure • bar	Gauge pressure = bar	mm (1)
PE 6 ARS 2525 +AB 1007 L	0,7	0,30	12,6 - 12,7 12,3 - 12,4
		0,26 0	11,7 - 12,0 11,5 - 11,6

Notes

(1) when n

gauge pressure :

bar (maximum full load control rod/travel)

40

WPP 001/4 DAF 8,3 k 7

1. Edition

Εn

PE 6 A 95 D 410 RS 2525 Komb.-Nr. 0 400 676 185 RSV 250-1200 A5C 2198-3 L

company DAF DH 825

Festoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0-2,1 (1,95-2,15)

mm (from BDC) RW = 7,5-10,5 mm

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm1/100 strokes 3	Difference cm²/ 190 strokes 4	Control rod travel rnrn 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,4+0,1	7,3-7,5	0,35(0,6)			
250	6,0-6,2	0,7-1,1	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	rated speed	j rev/min	Interme	ediate rateo	1 speed	(4)	Lower	rated speed	(3) to	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control lever deflection in degrees 7	rev/min	Control rad travel mm 9	rev/min	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 24	250	5,6	1200	10,4-10,5
	x =	4,3					100	min.19,5		11,2-11,3 11,1-11,2
ca. 58	9,4 4,0 1500	1240-1250 1320-1350 0,3-1,4					250 655-7,15	6,0-6,2 =2,0	940	10,7-11,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	il load stop	6 Rotational speed limitat		ie: delivery naracteristics	Starting t	fuel delivery 5	4e tdle stop	
Test oil te rev/min 1	emp 40°C (104°F) cm·/1000 strokes 2	Note changed to 1 rev/min 3	rev/min	cm/1000 strokes 5	rav/min 6	cmv1000 strakes 7	rev/min R	Control root travet mm
1200	73,0-75,0 (71,0-77,0)		300	74,5-77,5 (72,0-80,0)	100	120,0-130 (117,0-133		-

Checking values in brackets

* 1 mm less control rod travel than col 2

WPP 001/4 KHD 5,1 d 1

1. Edition

PES 5 A 80 D 410 RS 2526 Komb.-Nr. 9 400 093 228 1-3-5-4-2- je 72° ± 0,5° (± 0,75°)

RSV 325-1075 A1B 1111 DL

supersedes = Deutz Argentinien company F 5 L 913

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9-2,0 (1.85-2.05)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque-control valve)
rev/min	mm (2)	cm //100 strokes	cm ^{-/} 100 strokes	กากา	cm ¹ /100 strokes	mm
1	2	3	4	2	3	6
1075	9,4-9,5	5,3-5,4	0,25 (0,4)			_
325	6,4-6,6	0,6- 0,9	0,2 (0,35)			İ
	Ì					

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel mm	Control rod travel mm rev/min	Intermo	ediale raled	speed	Control lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 for rev/min	rque control Control rod travel mm
loose	800 x = (0,3-1,0 6,25	•	•	•	ca. 32	325 100 325	6,0 min.19,0 6,4-6,6	1075 500 800	9,4-9,5 11,2-11,3 10,4-10,7
ca. 65	8,4 4,0 1300	1115-1125 1150-1180 0,3-1,7					510-57			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	Rotational- speed irmitat	39 f	uel delivery naracteristics	Starting t	luel delivery 5	43 Idi	e stop Control rad
rev/min	emp 40°C (104°F) cm ¹ /1000 strokes 2	changed to 1 rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min	cm /1000 strokes 7	rev/min	travel mm
1075	52,5-53,5 (50,5-55,5)	1115-1125*	500 800	61,5-63,5 (59,5-65,5) 57,0-59,0 (55,0-61,0)	100	19,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

12.85

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung ç. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 KHD 5.1 e

1. Edition

PES 5 A 80 D 410 RS 2526

RS 325/1400 A0B 2212 L

Deutz Argentinien F 5 L 913

Komb.-Nr. 9 400 085 255

1-3-5-4-2 je 72° ± 0,5 ° (± 0,75 °)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 1,9-2,0 Port closing at prestroke (1,85-2,05) mm

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm/100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-//} 100 strokes 3	Spring pre tensioning (torque control valve) mm 6
1400	11,5+0,1	6,6-6,7),25 (0,4)			
325	8,4-8,6	1,0-1,3	0,2 (0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe	r rated speer	i rev/min	Interme	diate rate	d speed	(1)				rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
loose	800	0,3-1,0	-	-	-	H ca.28	325	8,5	1400	11,5-11,6
	X	= 2,0					280 420	8,8-9,6 5,6-6,4	500 1100	12,2-12,3
VHca.55	4,0	1440-1450 1500-1530 0,3-1,7					550 1300	max. 4,4 max. 3,8	1100	11,0-12,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill load stop emp_40°C (104°F)	6 Rotational- speed limitat		iel delivery paracteristics	Starting (uel delivery 5	4a) Idi	e stop Control rad
rev/min	cm·/1000 strokes	changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min 6	cm /1000 strokes 7	rev/min 8	travel mm 9
400	65,0-66,5 (64,0-68,0)	1440-1450*	500	55,5-57,5 (53,5-59,5)	100	19,0-21,0 mm RW	-	-
			1100	62,0-64,0 (60,0-66,0)				

Checking values in brackets

* 1 mm less control rod travel than col 2

12.85

Geschaftsbereich KH. Kundendienst. Kf2-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d. Allemagne par Robert Bosch GmbH.

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WPP 001/4 DAF 6,2 i 6

1. Edition

PE 6 A 90 D 320 RS 2547 Komb.-Nr. 0 400 676 180

RSV 250-1200 A5C 2203 R

company DAF DT 615

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,2 - 2,3 (2,15-2,35)

mm (from BDC)RW = 7.5-10.5 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre tensioning (torque-control valve) mm 6
1000	10,8+0,1	7,2-7,3	0,3 (0,45)			
250	5,9-6,1	0,9-1,3	0,25(0,45)			

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	3 to	rque control Control rod travel mm
loose	800 x =	0,3-0,7 3,3	-	•	-	ca. 22	250 100	5,5 min.19,5	400	10,8-10,9 11,2-11,3 11,2-11,7
ca. 54 _.	9,8 4,0 1490	1240-1250 1310-1340 0,3-1,4					250 585-64	5,9-6,1 5=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (184°F) cm³/1000 strokes 2	Rotational-speed limital Note changed to 1 rev/min cm²/1000 strokes 5			Starting fuel delivery 5 4a lidle stop lidle rev/min cm /1000 strokes rev/min 8			
LDA 1000	0,7 bar 71,5-72,5 (69,5-74,5)	1240-1250*	LDA 600	0 bar 51,5-53,5 (49,0-56,0)	100	140,0-150 (137,0-153	0 - 0)	-

Checking values in brackets

10.85

BOSCH

Geschaftsbereich KH. Kundendienst. Klz-Ausrustung < 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d Allemagne par Robert Bosch GmbH.

^{* 1} mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator DAF 6,2 i 6

- 2 -

Test at n =

1000

rey/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
-	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 ARS 2547 + A5C 2203 R	0,7	0,25 0,21 0	10,8-10,9 10,6-10,7 10,2-10,5 10,0-10,1

Notes

(1) when n =

rev/min and gauge pressure = bar (maximum full-load control rod travel)

40

WPP 001/4 KHD 6,1 d 3

1. Edition

PES 6 A 80 D 410 RS 2527 Komb.-Nr. 9 400 093 226

RSV 325-1150 A1B 1111 L

supersedes-

company Deutz Argentinien F 6 L 913

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

estoil-ISO 4113

1,9-2,0 (1,85-2,05)

mm (from BDC)

Rolational speed rev/min 1	travel	Fuel delivery cm //100 strokes 3	Difference cm ^{-y} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre tensioning (torque-control vallum mm
1150	9,3-9,4	5,4-5,5	0,25 (0,4)			
325	6,4-6,6	0,6-0,9	0,2 (0,35)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Degree of deflection of control lever	rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermediate rated speed		Control- tever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 to rev/min 10	rque controt Controt rod travet mm	
loose			•	•	•	ca. 32	325 100 325	6,0 min.19,0 6,4-6,6	1150 500 800	9,3-9,4 11,1-11,2 10,2-10,5
ca. 60	8,3 4,0 1300	1190-1200 1215-1245 0,3-1,7					510-570			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F) cm'/1000 strokes	Rotational- speed limitat Note changed to) rev/min Rotational- speed delivery characteristics rev/min cm³/1000 strokes		Starting f Idle rev/min	uel delivery 5 cm /1000 strokes	da idle stop Control rod travel rev/min		
1150	2 54,0-55,0 (52,5-56,5)	1190-1200*	500 800	61,5-63,5 (59,5-65,5) 56,5-58,5 (54,5-60,5)	100	7 19,0-21,0 mm RW	-	9

Checking values in brackets

* 1 mm less control rod travel than cot 2

12.85

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40

WPP 001/4 HAN 10,8 h 1

1. Edition

PE 6 A 95 D 320 RS 2557 Komb.-Nr. 0 400 676 186

RSV 400-1100 A8C 1117-1 R

supersedes.

company Hanomag engine D 963 N 110 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2,10-2,30)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	9,9-10,0	8,2-8,4	0,35(0,6)			
400	8,0-8,2	3,1-3,9	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermediate rated speed 4 5 6		Control- tever deflection in degrees		rated speed Control rod travel mm	3 to rev/min 10	rque control Control rod travel mm 11	
loose	800 x = 3	0,3-0,7 3,75	-	*	•	ca. 21		7,6 min. 19,5	1100 500 865	9,9-10,0 10,7-10,8 10,3-10,5
ca. 49	8,9 4,0 1365	1140-1150 1200-1230 0,3-1,4					400 570-630	8,0-8,2 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(ED)	ull-load stop	Rotational speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a) Idle stop		
rest on to rev/min 1	cm ⁻ /1000 strokes	changed to) rev/min 3	rev/min	cm/1000 strokes	rev/min	cm /1000 strokes 7	rev/min 8	travel mm 9	
100	82,0-84,0 (80,0-86,0)	1140-1150*	400	31,0-39,0 (28,5-41,5)		122,0-132, 119,0-135,		-	

Checking values in brackets

* 1 mm less control rod travel than col 2

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WFP 001/4 MB 3.8 n 12

1. Edition

PES 4 A 90 D 410 RS 2570 Komb.-Nr. 9 400 085 230

and Governors

ROV 300-1400 AB 1146-3 L

supersedes-

company: Daimler-Benz OM 314 A 81.0 kW

All test specifications are valid for Bosch-Fuel Injection Pump Test Benches and Testers

Test Specifications

RW = 9.0 - 12.0 mm(1.95-2.15)mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,8+0,1	8,0-8,1	0,3(0.5)			
300	8,9-9,1	1,3-1,7	0,25(0,45)		

Adjust the fuel delivery from each outlet according to the values in g

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	aed	Lower rated	speed	4	Sliding	ileeve travel
deflection	rev/min Control rod travel	Control rod travel	(of control		Control rod travel	Degree of deflection of control		Control rod travel		0
	mm	rev/min	(28)	lever	rev/min	mm (4)	lever	rev/min	mm (3		
	2	3		•	ס	0	<u>'</u>	8	9	10	11
max.	1400	15,2-17	,8	-	-	-	ca. 16		min.10,5		1,2-1,4
						ŀ	1	300	8,9-9,1		3,3-3,6
ca. 64	11,8	1440-14	50				1	740-8	300= 2,0		5,4-5,7
	4,0	1585-1	615			1	400-470			1485	8,6
•	1800	0-1,	0								
							0				
							39]

Torque control travel a = 1,0

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten rev/min		Rotational-speed 2b limitation intermediate speed rev/min 3	high idle s	cm³/1000 strokes	Starting fuel delivery Idle switching point rev/min cm³/1000 strokes 6 7		Torque- travel rev/min 8	Control fod travel mm
LDA 1400	0,5 bar 80,0-81,0 (78,0-83,0)	1440-1450*	LDA 500 LDA 500	0,5 bar 74,0-76,0 (72,0-78.0) 0 bar 56,5-58,5 (54,5-60,5)	100	73,0-83,0 (70,0-86,0)	500 1050	12,8+0, 13,8+0, 13,5+0, 12,9+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2



D. Adjustment Test for Manifold Pressure Compensator

MB 3,8 n 12

-2-

Testatn -

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure - bar	Gauge pressure = bar	mm (1)
PES 4 ARS 2570 + AB 1146-3 L	0,5	0 0,33 0,23	13,8-13,9 12,1-12,2 13,4-13,5 12,4-12,7

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

F3

WPP 001/4 DAF 8,3 n 5 1. Edition

En

PE 6 A 95 D 410 RS 2575

RSV 250-1200 A 5 C 2198-1 L

supersedes company DAF DH 825

Komb.-Nr. 0 400 676 1/5

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,0-2,1 (1,95-2,15)

mm (from BDC) RW = 7.5 - 10.5 mm

ravel	cm/100 strokes 3	cm ¹ / 100 strokes 4	travel mm 2	cm·/100 strokes 3	(torque-control valve) mm 6
10,4+0,1	7,3 - 7,5	0,35(0,6)			
6,0-6,2	0,7 - 1,1	0,35(0,55)			
					·
2	10,4+0,1	3 10,4+0,1 7,3 - 7,5	m (2) cm /100 strokes 100 strokes 4 10,4+0,1 7,3 - 7,5 0,35(0,6)	m (2) cm /100 strokes 100 strokes mm 2 10,4+0,1 7,3 - 7,5 0,35(0,6)	m (2) cm ¹ /100 strokes 100 strokes mm cm ¹ /100 strokes 3 10,4+0,1 7,3 - 7,5 0,35(0,6)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	hate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm		rque control Control rod travel mm
loose	X =	0,3-0,7 5,0				ca.24	250 100	5,6 min.19,5	1200 500	10,4-10,5 11,2-11,3
ca.58	9,4 4,0 1505	1240-1250 1340-1370 0,3-1,4					250 635 -	6,0 - 6,2 695 = 2,0		11,1-11,2 10,7-11,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational- speed limitat	Rotational speed limitat Spe			Starting fuel delivery 5 4a Idle stop			
Test oil to rev/min 1	cm ^{1/1000} strokes 2	Note changed to) rev/min 3	revimin 4	cm½1000 strokes 5	rev/min 6	cm/1000 strokes 7		Control rod travel mm 9	
1200	73,0 - 75,0 (71,0 - 77,0)	1240-1250*	800	74,5 - 77,5 (72,0 - 80,0)	100	135,0-145, 132,0-148,			

Checking values in brackets

* 1 mm less control rod travel than col 2

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WPP 001/4 MB 5,7 v 15

1. Edition

PES 6 A 90 D 410 RS 2596

Komb.-Nr. 9 400 085 229

ROV 300-1400 AB 1146-2 L

supersedes" Daimler-Benz OM 352 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,8+0,1	8,1-8,2	0,3(0,5)			
300	8,9-9,1	1,3-1,7	0,25(0,45)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
deflection	rev/min Control rod travel	Control rod travel	(19)	Degree of deflection of control	:	Control rod travel	Degree of deflection of control		Control rod travel		0
	mm	rev/min	29		rev/min	mm 4	lever	rev/min	mm ③	rev/min	1
1	2	3		4	5	6	7	В	9	10	11
max.	1400	15,2-17	,8	-	-	-	ca. 16		min.10,5 8,9-9,1		1,2-1,4 3,3-3,6
ca. 64	11,8 4,0 1800	1585-16	15					Į.	300=2,0		5,4-5,7 8,6
							3 a				

Torque control travel a = 1.0

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop	Rotational-speed 2b limitation intermediate speed	Fuel deli- high idle s	very characteristics 5a	Starting idle switching	• •	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes	⊭ev/min	cm ³ /1000 strokes	rev/min	travei mm
1	2	3	4	5	6	7	8	9
LDA 1400	0,5 bar 81,0-82,0 (79,0-84,0)	1440-1450*	LDA 500 LDA 500	0,5 bar 76,5-78,5 (73,5-79,5) 0 bar 62,0-64,0 (60,0-66,0)	100	73,0-83,0 (70,0-86,0) =14,8-15,2 mm RW	500 1050	12,8+0, 13,8+0, 13,5+0, 12,9+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

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D. Adjustment Test for Manifold Pressure Compensator

MB 5,7 v 15

-2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 ARS 2596 +RQVAB 1146-2 L	0,50	0 0,33 0,23	13,8-13,9 12,5-12,6 13,5-13,6 12,5-12,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

40

WPP 001/4 MB 5,7 v 14 1. Edition

En

PES 6 A 90 D 410 RS 2596 Komb.-Nr. 0 400 876 310 RSV 350-1200 AOC 1148 L

supersedes

company Daimler-Benz engine OM 352 A 110 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump, Settings

Port closing at prestroke

(1.95-2.15

mm (from BDC) RW 9,0-12,0 mm

Rotational speed rev/min	Control rod travel * mm 2	Fuel delivery cm /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre tensioning (torque-control valve) mm 6
1180	12,2+0,1	7,4-7,5	0,3(0,45)			
350	8,6-8,7	1,2-1,6	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Controt rod travel mm rev/min 3	Intermediate rated speed 4 5 6		Control- lever deflection in degrees 7 L ower rated speed Control rod travel mm 9			Torque control Control red travel mm 10 11		
loose	800 x = 5,	0,3-1,0 0	-	***	-	lose	350 100 350	8,6 min. 19,0 8,6-8,7	725	12,2+0,1 13,5+0,1 12,9+0,2
a. 62 28	11,2 4,0 1460	1220-1230 1335-1365 0,3-1,7					510-570		300	12,370,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(20)	ill-load stop	6 Rotational speed limitat		uel delivery naracteristics	Starting fidle	uel delivery 5	4a) Id	e stop
Test oil to rev/min 1	emp 40 C (104 F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm·/1000 strokes	rev/min	cm·/1000 strokes 7	rev/min 8	Control root travel mm
LDA 1200	0,9 bar 74,0-75,0 (72,0-77,0)	1220-1230*	LDA 900	0,9 bar 74,0-78,0 (71,5-80,5)		78,0-88,0 (75,0-91,0 16,0-16,4 mm RW		-
LDA 725	0,9 bar 79,0-81,0 (76,5-83,5)		LDA 500	0 bar 51,0-53,0 (49,0-55,0)				

Checking values in brackets

* 1 mm less control rod travel than col 2

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D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 ARS2596 withAOC1148 L	0,90	0 0,45 0.24	13,5-13,6 11,5-11,6 12,6-12,7 12,0-12,2

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testing the hydraulic start-locking device

0,75 - 0,85 bar 0,25 - 0,35 bar

Locking at Unlocking at

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 5.7 v 13 1. Edition

supersedes _

PES 6 A 90 D 410 RS 2596 Komb.-Nr. 9 400 085 222

ROV 300-1400 AB 1196 L

company: Daimler-Benz OM 352 A engine 124 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	13,0+0,1	7,8 - 7,9	0,3 (0,5)			
300	9,4-9,6	1,3 - 1,7	0,25(0,45)		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	speed		Intermediat	e rated sp	eed	Lower rated	speed	•	Sliding	sleeve travel
	rev/min Control rodtrave	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	J	0
lever	mm 2	rev/min 2a	lever 4	rev/min 5	mm 4	lever	rev/min 8	mm (3)	rev/min 10	mm 11
max.	1500	15,2-17,8	-	-	•	ca. 30	100	min.11,0		0,9-1,3
ca. 63	11,4 4,0 1750	1570-1600	3				300 610	19,4-9,6 -670=2,0	800	2,4-2,6 4,3-4,5 5,7-5,9 8,6
						3				

1.1 mm Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed			Starting Idle switching		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	trave) mm
1	2	3	4	5	6	7	8	9
LUA 1400 LUA 900	0,7 bar 71,5-72,5 (69,5-74,5) 0,7 bar 72,0-74,0 (69,5-76,5)	1440-1450*	LDA 600 LDA 500	0,7 bar 71,0-73,0 (68,5-75,5) 0,7 bar 56,0-57,0 (54,0-59,0)	100	73,0 - 83,0 =15,6- 16,0 mm RW	600 900	12,412,5 13,813,5 13,313,5 12,813,1

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator MB 5.7 v 13

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel-	diminution difference
	Gauge pressure - bar	Gauge pressure = bar	mm (1)	
PES 6 ARS 2596 +RUV AB 1196 L	0,7	0 0,3 0,24	13,8 - 12,6 - 13,5 - 12,8 -	12,7 13,6

Notes

(1) when n =

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

FAD

Testoil-ISO 4113

WPP 001/4 KHD 12,7 p 2

1. Edition

PE 8 A 95 U410 LS 2608

ROV 300-1250 AB 1195 L

supersedes _

Komb.-Nr. 0 400 648 141

company. KHD

F 8 L 413 F

1 - 8 - 7 - 2 - 6 - 5 - 4 - 3 je $45^{\circ} + 0.5^{\circ} + 0.75^{\circ}$

188 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,4+0,1	9,2 - 9,4	0,35(0,6)	/		
300	6,4-6,6	0,8 - 1,4	0,35(0,55			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s				Intermediate	rated sp	•	Lower rated	speed	1	Sliding s	leeve travel
deflection	rev/min Control	Control rod	\odot	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
lever	rodtravel	rev/min	②	lever	rev/min	mm (4		rev/min	mm ③	rev/min	mm 11
<u> </u>	-			•	3	0	1	8	9	10	* '
max.	1280	15,2-17	,8	-	-	-	ca. 15	100	min. 8,1	300	1,2-1,3
			_				İ	300	6,5-6,7		2,6-2,9
ca. 46	9,4	1290-13				ł	1	l			5,4-5,6
	4,5	1365-13	95				300-450				7,7-7.8
1	1500	0,3-1,	0				1_	1		1380	8,7
							③				,

Torque control travet a = 0.45 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop mp 40°C (104°F) 2	Rotational-speed (2b) fimitation intermediate speed ray/min (4a)	high idle s	very.characteristics 5a peed 5b cm³/1000 strokes	idle switchis	0	Torque travel	Control od travel
1	2	3	4	5	6	7	8	9
1250	91,5-93,5 (89,5-95,5)	1290-1300 *	750	93,0-96,0 (90,5-98,5)	100	116,5-126,5 (113,5-129,5	500 845	10,4+0,1 10,8+0,1 10,6+02 10,4+02

Checking values in brackets

* 1 mm less control rod travel than cot 2

WPP 001/4 VAL 3.3 a 1

2. Edition

PES 3 A 95 D 320 RS 2655 Komb.-Nr. 0 400 873 032 1-2-3 je 120° ± 0,5° (± 0,75°)

RSV 325-1150 A 2 C 2178-1 R

supersedes 7.85 Valmet J11 D 56

A. Fuel Injection Pump Settings

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Port closing difference between control-rod

travel 9 mm and max. 4,5-5,5° camshaft

2,5-2,6 Port closing at prestroke (2.45-2.65)

mm (from BDC) RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm //100 strokes 3	Oifference cm ^{-y} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre tensioning (torque-control valve) mm 6
1130	10,4+0,1	8,9-9,1	0,35(0,6)			
325	6,5-6,7	2,2-2,8	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel mm		Intermediate rated speed 4 5 6		Control- lever deflection in degrees 7	lever travel deflection rev/min mm		3 Torque control Control rod travel rev/min 10 11		
loose	800 x =	0,3-0,7 5,0	-	-	-	ca. 27	325 325	6,1 6,5-6,7	1130 500 915	10,4-10,5 11,8-11,9 11,2-11,4
ca. 54	9,4 4,0 1405	1170-1180 1235-1265 0,3-1,4					470-530	= 2,0		,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(9)	ull load stop	6 Rotational speed limitat		uel delivery naracteristics	Starting I	uel delivery 5	4a Idle stop	
lest oil ti re i/min 1	emp 40°C (104 F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min	cm/1000 strokes 7	rev/min	Control rol travel mm
1130	88,5-90,5 (86,5-92,5)	1170-1190*	500	94,5-96,5 (92,0-99,0)	100 325	190,0-200 (187,0-203 =19,5-21,0 mm RW 22,0-28,0 (19,5-30,5	(0))	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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WPP 001/4 MWM 3,1 b 3. Edition

PES 3 A 90 D 320/3 RS 2658 Komb.-Nr. 0 400 863 008

RSV 325-1500 A2B 505-2 R A2C 505-2 R supersede 5.84 D 226 B-3

1 - 2 - 3 je $120^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.90-3.10)

mm (from BDC)

RW = 9.0

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mrn 2	cm1100 strokes	cm ^{-/} 100 strokes	mm 2	cm /100 strokes	mm 6
1500	11,2+0,1	9,0-9,1	0,3(0,45)			
325	7,0-7,2	0,8-1,4	0,25(0,45)		
Port clo	ing diffe	rence = 3,5-4 12 mm	5 mm bet	een contro	1-rod travel 9	mm and

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	cr rated speed Control rod travel mm		Interme	diate rate	d speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800 x =	0,3-0,7 4,75	•	-	-	ca.24	325 100	6,6 min.19,5	-	-
ca .63	9,5 4,0 1780	1540-1550 1615-1645 0,3-1,4				•	325 465 -	7,0 -7 ,2 525=2,0		·

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	Rotational speed limitat		uel delivery naracteristics	Starting l	Starting fuel delivery 5 4a Idle stop				
Test oil to rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm*/1000 strokes	rev/min	cm / 1000 strokes	rev/min B	Control root travel mm		
1500	89,5-90,5 (87,5 - 92,5)	1540-1550*	-	-	100	131,0-141, 128,0-144, = 19,5- 21,0 mm RW	p)	-		

Checking values in brackets

* 1 mm less control rod travel than col 2

40

WPP 001/4 MWM 6,2 e 3. Edition

En

PES 6 A 90 D 320/3 RS 2660

RSV 325-1500 A 2 B 505 - 2 R A 2 C 505 - 2R supersedes 5.84 company MMM

Komb.-Nr. 0 400 866 112

engine D 226-6

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,90-3,10)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm //100 strokes 3	Difference cm ^{-y} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1500 325	11,2+0,1 7,0 - 7,2	9,0 - 9,1 0,8 - 1,4	0,3 (0,5) 0,25(0,45			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed Control rod travel mm	_	Interme	ediate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,0	-	-	-	ca. 24	325	6,6	-	-
	X =	4,75					100	min. 19,5		
ca. 63	9,5 4,0 1780	1540-1550 1615-1645 0,3-1,					325 46 5 -	7,0-7,2 525-2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 b ^{Fu}	II-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	43 Idi	e stop
Test oil te rev/min 1	emp 40°C (104°F) cm ³ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm v1000 strokes 7	rev/min	Control root travel mm 9
1500	89,5 - 90,5 (87,5 - 92,5)	1540-1550*	•	-	-	1	•	-

Checking values in brackets

* 1 mm less control rod travel than col 2

40

WPP 001/4 MWM 6,2 e 3 2. Edition

Eπ

PES 6 A 90 D 320/3 RS 2660

RSV 325-1200 AOC 2182-1R

Komb.-Nr. 0 400 866 114

All test specifications are valid for Bosch Fuel Injection Punip Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke

Testoi-150 4113

(2.90 - 3.10)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ^{1/100} strokes 3	Cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm //100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1200	12,0+0,1	9,9-10,0	0,3(0,45)			
325	6,9-7,1	0,8-1,4	0,25(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever dellection in degrees 7	_	rated speed Control rod travel mm	(3)	rque control Control rod travel mm
loose	800 X = 3	0,3-0,7 3,25	-	-	-	ca.18	325 100	6,5 min.19,5	1200 500 1125	12,0-12,1 12,5-12,6 12,3-12,5
ca.45	11,0 4.0 1465	1240-1250 1300-1330 0,3-1,4					325 495 -5 5	6,9=7,1 5 = 2,0	1129	12,95 12,9

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	all-load stop	Rotational- speed fimital		iel delivery iaracteristics	Starting fuel delivery 5 4a idle stop idle			
rev/min	cm ¹ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min 6	cm/1000 strokes 7	rev/min 8	travel mm 9
LDA 1200	0,7 bar 99,0-100,0 (97,0-102,0)	1240-1250*	LDA 500	0 bar 62,0-63,0 (60,0-65,0)	100	135,0-145, (132,0-148 =19,5- 21,0 mm RW		•

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

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D. Adjustment Test for Manifold Pressure Compensator

MWM 6,2 e 3 -2-

Test at n -

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES6ARS2660	0,70		12,5-12,6
+RSVA0C2182-1R		0 0,46 0,21	10,2-10,3 12,0-12,1 10,8-11,0

Notes

(1) when n =

rev/min and gauge pressure =

bar (* maximum full-load control rod travel).

40

WPP 001/4 LIE 5,6 a

2. Edition

En

PES 4 A 95 D 410 RS 2685

RSV 400-1000 A 1 C 2187 L

supersedes 8.84 company Liebherr

Komb.-Nr. 0 400 874 238

ngine D 904 NA 70 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,7-2,8 (2,65-2,85)

mm (from BDC)

	1-	,05-2,057				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (forque-control valve)
rev/min 1	mm 2	cm*100 strokes 3	cm ¹ / 100 strokes 4	mm 2	cm //100 strokes 3	mm 6
1000	9,7-9,8	7,9-8,1	0,35(0,6)			
400	6,1-6,3	1,0-1,6	0,35(0,55)			
		: 				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	Trev/min Control rod travel mm rev/min	Intermediate rated speed 4 5 6		Controt- tever deflection in degrees 7	Control lever deflection rev/min mm			rque control Control rod travel mm	
loose	800 x =	0,3-0,7 2,5	-	-	•	ca. 23		5,7 min.19,5	1000 550	9,7-9,8 9,7-9,9
ca. 50	4,0	1040-1050 1065-1095 0,3-1,4						6,1-6,3 15-2,0	430	10,9-11,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limital		uel delivery paracteristics	Starting fuel delivery 5 delivery 1dle stop				
rev/min	emp 40°C (104°F) cm ^{1/1} 1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm*/1000 strokes 5	rev/min	cm/1000 strokes	rev/min	Control rod travel mm	
1000	79,0-81,0 77,0-83,0)	1040-1050*	600	69,0-72,0 (66,5-74,5)	100	120.0-130 (117,0-133 = 19,5-21, mm RW	0 - 0)	-	

Checking values in brackets

* 1 mm less control rod travel than col 2

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617

40

WPP 001/4 LIE 8,4 a

2. Edition

Εn

PES 6 A 95 D 410 RS 2689 RSV 400-1000 A 1 C 2187 L Komb.-Nr. 0 400 876 322

supersed 8.84 Liebherr D 906 NA engine D 906 NA

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,7-2,8

Port closing at prestroke (2,65-2,85)

mm (from BDC)

Rotational speed rev/min 1	Control rod travet mm 2	Fuel delivery cm /100 strokes 3	Oifference cm·/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁻ /100 strokes 3	Spring pre tensioning (torque control valve) mm 6
1000	9,7-9,8	8,1-8,3	0,35(0,6)			
400	6,1-6,3	1,0-1,6	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	r rated speed		Interme	diate rated	speed	(4)	Lower	rated speed	1 5 /	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm 9	rev/min	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca.23	400	5,7	1000	9,7-9,8
	x =	2,5					100	min.19,5	550 430	9,7-9,9 10,9-11,5
ca. 50	8,7 4,0 1230	1040-1050 1065-1095 0,3-1,4					400 455 - 51	6,1-6,3 5 = 2,0	430	10,5-11,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

Hoad stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting l	fuel delivery 5	4a Idle stop	
mp 40°C (104°F) cm//1000 strokes 2	Note changed to) rev/min 3	rev/min	cmV1000 strokes	rev/min	cm/1000 strokes	rev/min 8	Control rad travel mm
81,0-83,0 (79,0-85,0)	1040-1050*	600	70,0-73,0 (67,5-75,5)	100 400	(117,0-133	.0)	-
f	mp 40°C (104°F) cm*/1000 strokes 2 81,0-83,0	speed limitat Note changed to) rev/min 3 81,0-83,0 1040-1050*	speed limitat Note Changed to) rev/min 3 4 600	speed limitat Note changed to) rev/min rev/min cm1/1000 strokes 2 3 4 5	Note	Note Changed to rev/min cm 1/1000 strokes rev/min cm 1/1000 strokes cm 1	Note Changed to rev/min Changed to rev/min Changed to

Checking values in brackets

* 1 mm less control rod travel than col 2

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WPP 001/4 DAF 6,2 o 3

1. Edition

PES 6 A 95 D 320 RS 2693 Komb.-Nr. 0 400 876 327

RSV 300-1300 AOC 2195 R

supersede? DAF DAF DNT 620 130,0 kW

Festoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0-2,1 (1,95-2,15)

mm (from BDC); RW = 7,5 - 10,5 mm; cyl. 1;

Rotational speed revimin	Control rod travel	Fuel delivery cm*/100 strokes 3	Oifference cm '/ 100 strokes 4	Control rod travel mm	Fuel delivery cm*/100 strokes	Spring pre-tensioning (torque-control valve) mm
850	11,5+0,1	7,6-7,8	0,35(0,45)			
300	6,1-6,3	0,7-1,1	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

17 1 1	r rated speed Control rod travel mm		Intermediate rated speed 4 5 6			Control- lever deflection in degrees 7		raled speed Control rod travel mm	1 3	rque control Control rod travel mm
loose	800 x =	0,3-0,7 5,0	•	-	-	ca. 25	300 100	5,7 min.19,5	1290 500 1015	11,0-11,1 11,6-11,7 11,3-11,5
ca. 55	10,0 4,0 1570	1330-1340 1410-1440 0,3-1,4					300 560-620	6,1-6,3 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(J)	ill load stop	6 Rotational- speed limitat		uel delivery paracteristics	Starting I	uel delivery 5	(4a) Idi	e stop
Test oil for	emp_40°C (104°F) cm ¹ /1000 strokes	Note changed to) rev/min	rev/min	cm ^y 1000 strokes	rev/min	cm/1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 850	0,7 bar 76,0-78,0 (74,0-80,0)		LDA 1290	0,7 bar 75,5,78,5 (73,0-81,0)	100	130,0-140 (127,0-143		-
			LDA 600	0 bar 65,0-67,0 (63,0-69,0)	300	7,0-11,0 (4,5-13,5)		

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

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D. Adjustment Test for Manifold Pressure Compensator

DAF 6,2 o 3

diminution

difference

11,5-11,6 11,2-11,4 11,4-11,5

Control rod travel-

bar mm

(1)

Test at n =

Pump/governor

600

Setting

rev/min decreasing pressure – in bar gauge pressure

Measurement

bar | Gauge pressure =

	Gauge pressure =
PES 6 ARS 2693 with AOC 2195 R	0,7

Notes:

Festoil-ISO 4113

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

0 0,25

40

WPP 001/4 MB 6,0 c 1 1. Edition

Εn

PES 6 A 90 D 410 RS 2710 Komb.-Nr. 0 400 876 334

Port closing at prestroke

RSV 350-750 A O C 2006-3 L

supersedes company

Daimler-Benz Ol! 366

engime

54,0 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,25-2,35

(2,20-2,40)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm:/100 strokes 3	Spring pre tensioning itorque-control valver mm 6
700	11,4+0,1	5,4 - 5,5	0,3 (0,45)]
350	8,2-8,4	0,6 - 1,2	0,25(0,45)			
			1		1	

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

	rated speed Control rod travel mm		Intermed	tiate rated	speed	Control- lever deflection in degrees 7		rated speed Control rud travel mm	(3)	rque control Control rod travel mm
loose	800 x =	0,3-1,0	-	-	=	ca. 20	350 100	8,3 min.19,5	-	-
ca.32	~	/50-755 775-788 0,3-1,4					350 380 -	8,2-8,4 420=2,0**		

The numbers denote the sequence of the tests Set idle-speed auxiliary spring at 2 mm control-rod travel,

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil to	emp 40 C (104°F)	Rotational speed limitat changed to 1		et delivery aracteristics cm //1000 strokes	Idle			Control rad travel
rev/min	cm /1000 strokes 2	rev/min 3	4	5	6	7	8	9
700	53,5 - 54,5 (51,5 - 56,5)	750-755 *	-	-	100	78,0-88,0 (75,0-91,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than cot 2

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WPP 001/4 DEE 7,6 d 2. Edition

US-PES 6 A 100 D 410 RS 3036 Komb.-Nr. 9 400 230 020

US-RSV 600-1100 A 2 B 2079L supersedes 9.83

John Deere company 6466 T engine 132 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Set and

Port closing at prestroke

Testoil-ISO 4113

1,95-2,05 (1,90-2,10)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Oilference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm+/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	10,8+0,1	10,9-11,1	0,3(0,6)			
600	5,2-5,4	1,2-1,6	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel mm		Interm	ediate rated	speed	Control- lever deflection in degrees		rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,0		-		ca. 22	600 100	4,7 min.19,0	1100 750	10,8-10,9 11,6-11,7
ca.42	9,8 4,0 1285	1145-1155 1185-1215 0,3-1,7					600 630-690 800	5,1-5,3 = 2,0 max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	Rotational- speed limital Rotational- speed limitat Rotational- speed limitational- speed limitatio			Starting fuel delivery 5 4a Idle stop				
Test oil to rev/min 1	emp 40°C (104°F) cm ^{-/} /1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min	cm ¹ /1000 strakes 7	rev/min 8	Control rod travel mm 9	
LDA 1100	0.8 bar 109,0-111,0 (105,0-114,0)	1145-1155*	LDA 750 LDA 500	0,8 bar 116,5-119,5 (115,0-121,0) 0 bar 68,5-71,5 (65,0-73,0)	100 High 1200	170,0-195 idle speed 19,0-29,0		-	

Checking values in brackets

10.85

Geschaftsbereich AH Kundendienst Kfz-Ausrustung c 1980 by Robert Bosch GmbH. Posifach 50. D-7000 Stuttgart 1 Printed in the Federal Republic of Germany Imprime en Republique Fédérale d Allemagne par Robert Bosch GmbH

^{* 1} mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

DEE 7,6 d

. 2 -

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference			
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .			
US-PES6ARS3036	0,43		11,5 - 11,6			
+ US-RSVA2B2079L		0,19	9,8 - 10,2			

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

40

WPP 001/4 PEN 6, 11:

1. Edition

En

PES 6 MW 100/320 RS 1132 RSV 325-1250 MW 2 A 308-3 0 403 476 042 supersedes Volvo Penta companyTD 61 APP engine 147 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,85-3,05)

mm (from BDC) RW = 9 - 12 mm

Rotational speed rev/min t	Control rod travel	Fuel delivery cm ^{-/} 100 strokes 3	Oifference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm/100 strokes 3	Spring pre tensioning dorque control valves mm
1000	10,8-10,9	8,5-8,7	0,35(0,6)			
325	6,1-6,2	1,2-1,6	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intern	nediate rat	ed speed	4	Lowe	3 forque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
loose	800	0,3-1,0				ca. 24	325	6,1-6,2		
							100	min.19,0		
ca. 54	1340-	1300=9,8 1370=4,0 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load step	6 Rotational- speed limital 3a Fuel delivery characteristics			Starting fuel delivery 5 4a lidle stop			
Test oil to rev/min	emp 40 °C (104 °F) cm·/1000 strokes 2	Note changed to 1 rev/min 3	rev/min	cm ⁻ /1000 strokes	rev/min	cm ¹ /1000 strokes	rev/min B	Control rad travel mm
1000	85,0-87,0 (83,0-89,0)				100	140-160 (137-163)		
					325	12,0-16,0 (9,5-18,	5)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Test Specifications (5) **Fuel Injection Pumps** and Governors

WPP 001/4 MB 2,4 1 1

3. Edition

En

PES 4 M 55 C 320 RS 107-1 RSF 375/2250 M 18

Sales model 0 400 074 958 Komb.-Nr. 0 400 074 961

supersedes 1.85

Daimler-Benz OM 616

53 kW (72) PS)

1 - 3 - 4 - 2 0 - 90-180-270

150

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,20-2,30 (2,15-2,35)

mm (from BDC)

20 mm

Control rod travel

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min 1	mm 2	cm³/100 strokes	cm 1/100 strokes	mm 2	cm ⁴ /100 strokes 3	mm 6
1000	13,4 ^{+0,1}	3,9-4,0	0,25(0,30)			
375 1800 2200	6,0-6,2	0,6-0,7	0,1 (0,15) 0,25(0,3) 0,25(0,3)			

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

Lower rated sp	eed		Upper rated sp	eed		Variations in co	introl red trav	rel
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel			Rotational speed	Control rod travel
lever	mm	rev/min	lever	mm	rev/min		rev/min	mm
1	2	3	4	5	6	7	8	9
2	nin.11,0 nax.10,5 6,0-6,2 4,8-5,0	300 375	50 7 8 9 10	0-1,	6 2500 -	(2) (3) (4) (6)	100 1800 1000 Switching p	min. 20,1 12,8-13,0 13,4-13,5

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load d	elivery (19)	Full-load speed (8a)	Variations delivery	in fuel (17)	Starting fuel delivery Idle			
Test oil ten	np 40°C (104°F)			1 (18)			Difference	
revision	cm³/1000 strokes	rev/min	rev/min	cm 1/1000 strokes	rev/min	cm ³ /1000 strokes	cm 1/1000 strokes	
1	2	3	4	5	6	7	8	
2200	39,5-41,5 (38,5-42,5)	2500* RW 8,2-8,6	1800 1000	39,0-41,0 (38,0-42,0) 39,0-40,0 (38,0-41,0)	100 375 2500	min. 53,0 6,0-7,0 (5,5-9,0) 23,0-27,0 (22,0-28,0)	1,0 1,5 2,5 See 3,0 Point 8 a 16	

Checking values in brackets

*ca. 4,2 less control rod travel than in Column 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fedérale d'Allemagne par Robert Bosch GmbH.

- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (4,7-5,1) mm.
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 mm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 47°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 30°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Control lever against idle stop.

 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

(5)

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MB 3,0 o 2

4. Edition

Εn

PES 5 M 55 C 320 RS 108-1 RSF 350/2300 M 16

Komb.-Nr. 0 400 075 987

Sales model 0 400 075 988

supersedes 1.85
company Daimler-Benz

engine UM 617

65 kW (88 PS) Sweden version

1 - 2 - 4 - 5 - 3

 $0 - 72-144-216-288 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,20-2,30 (2,15-2,35)

mm (from BDC)

Control rod travel

18,5-21,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning icompensating valves
rev/min	mm	cm ¹ /100 strokes	cm 1/100 strokes	mm	cm 1/100 strokes	mm
⁶ 1	2	3	4	2	3	6
1000	13,4 ⁺⁰ ,1	3,9-4,0	0,25(0.3)			
350 1800 2200	6,0-6,2	0,6-0,7	0,1 (0,15) 0,25(0,3) 0,25(0,3)			

Set uniform delivery according to the values in [_______

Checking values in brackets

B. Governor Settings

Lower rate	d spe	ed		Upper rat	ed sp	eed			Variations	in ca	introl rod trai	vet
Degree of deflection of control		Control rod travel	Rotational speed			Control rod travel	Rotati	onal speed		Rofational Control speed		Control rod fravel
lever	1	mm	rev/min	lever		unus	rev/m	in.			rev min	mm
1		2	3	4		5	6		7		8	9
9-13 (2	min.10, max. 9, 6,0-6,2 4,6-4,8	5 300 350	50	7 8 9	12.5-12 8,6-9,6		2200 2500 -		(12) (13) (14)	100 1800 1000	min. 20,1 13,0-13,2 13,4-13,5
(3) (4) (5)		2,0	450 ** 780-820		(i) (i)			2950		6	Switching p	aint

C. Settings for Fuel Injection Pump with Governor Mounted

Full load d	lelivery (19)	Full load speed (8a) regulation	Variations delivery	in fuel 17	Starting f	uel delivery	
Test oil ten	mp 40 C (104 F)		Ì	1 18			Difference
rev/min	cm ^{-/} /1000 strokes	rev/min	rev/min	cm 1/1000 strokes	rev-min	cm1/1000 strokes	cm /1000 strakes
1	2	3	4	5	6	7	В
2200	39,5-41,5 (38,5-42,5)	2500* RW 8,6-9,0	1800	39,0-41,0 (38,0-42,0)	100	min. 53,0	6,0
			1000	39,0-40,0 (38,0-41,0)	350	6,0-7,0 (5,5-9,0)	1,0 1,5 (15)
					2500	22 0 27 0	2,5 See 3,0 Point 8 a 16

Checking values in brackets

*ca. 4.0 less control rod travel than in Column?

BOSCH

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1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany
Imprime en Republique Federale d Allemagne par Robert Bosch GmbH.

- 1. ** Checking the idle speed auxiliary spring setting at n = 450 rpm, control rod travel (4,5-4,9 mm).
- 2. Adjusting the idle control-lever position:

 At 1000 min⁻¹, control-rod travel 1.4 1.5 mm.
- Testing the idle-speed auxiliary spring shutoff
 Control-lever position 47°. No change in control-rod travel after switching point up to 550 min⁻¹.
 Control-lever position 30°. Rotational-speed range 350 min⁻¹ 450 min⁻¹.
- Testing the pneumatic shutoff box

 Control lever against idle stop.

 At n = 375 min⁻¹ and 450 mbar (vacuum) (338 mmHg) the control rod must move briskly to RW (control-rod travel) = 0 mm.

and Governors

WPP 001/4 MB 3,0 **

Eπ

1. Edition

COLTECTION OF

PES 6 M 55 C 320 RS 156 RSF 315/2300 M 59-3 0 400 076 994 1-5-3-6-2-4 0-60-120-180-240-300

supersedes_

company Daimler Benz

OM 603 80 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,00-2,10 (1.95-2.15) mm (from BDC) 20-22

Note: Before starting testing, observe the

Control rod travel important instructions on the reverse.

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm ¹ /100 strokes	cm 1/100 strokes	mm	cm ⁴ /100 strokes	mm
1	2	3	4	2	3	6
1000	11,3+0,1	3,15-3,25	0,25(0,3)			
290	5,4-5,6	0,55-0,65	0,1(0,15)			
	<u> </u>			<u> </u>		

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

Lower rated speed	d		Lipper rated s	péed		Variations in control red travel			
deflection tra	ontrol rod avel		Degree of deflection	Control rod travel	Rotational speed		Rotational speed	Control rod travel	
of control lever m	ım		of control lever	mm	rev/min		rev/min	mm	
1 2		3	4	5	6	7	8	9	
② 5.	in.7,0 ,4-5,6 ,2-4,4 - 1,5	220 290 360**	_	0-1,0	8 2200 2500 2950	(2) (3) (4)	100 1800 1000 Switching po	min. 20,1 10,9-11,1 11,3-11,4	

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load o	,	Full-load speed (8a) regulation	Variations delivery	\sim		luel delivery	IDifference
Test oil te	mp 40°C (104°F)			(18)			
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	tea/wiu	cm ¹ /1000 strokes	cm 1/1000 strokes
1	2	3	4	5	6	7	8
2200	33,5-35,5 (32,5-36,5)	2500*	1800	34,0-35,5 (33,0-36,5)	100 290	min. 55 5,5-6,5 (5,0-9,5)	6,0 1,0 (1,5)
			1000	31,5-32,5 (30,5-33,5)	2500	22,0-26,0 (21,0-27,0)	2,5 See (3,0) Point

Checking values in brackets

*ca. 2,6 less control rod travel than in Column 2

Geschaftsbereich KH: Kundendienst: Kfz-Ausrustung 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1: Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH

- 1. ** Supplementary idle spring inspection, setting at n = 360 1/min control-rod travel (4.1-4.5 mm).
- 2. Set idle control-lever position:

At 1000 1/min. control-rod travel 0.9-1.0 mm.

3. Check supplementary idle spring cutoff

Control-lever position 49°, after switch-over point (of starting curve) up to 1000 1/min max. 0.2 mm control-rod travel deduction allowable.

Control-lever position 46.5°, after switch-over point (of starting curve) control-rod travel deduction must be greater than 0.2 mm.

4 Checking pnuematic shutoff box

Control lever at idle stop. At $n=290 \, \text{min}^{-1}$ and $pu=450 \, \text{mbar}$, control rod must readily go to a travel of 0 mm.

- 5. Overflow valve 1 469 990 351
- Port closing (difference) between greatest/smallest value 1° camshaft maximum
- 7. FBG setting

FBG setting and blocking per mean port closing value of all cylinders, 19.5 ± 0.2 (0.3) degrees camshaft after cyl. 1.

- 8. Checking ELR control magnet
 - Control lever at idle stop At n = 315 1/min, I = 1.8 A, Control-rod travel = (12.6-14.0 mm, fuel delivery (32.0-40.0) ccm/1000 strokes.

Note:

If the fuel delivery measured is higher than 2.0 ccm/1000 strokes outside of inspection tolerance, replace control magnet.

- Control lever at full-load stop
At n = 2950 1/min, I = 3 A (short duration), control-rod
travel = 0-1.0 mm

Start check: At n = 100 l/min, l = 1.8 A, fuel delivery min. 55.0 ccm/1000 strokes.

9. Intermediate control curve (control-lever position) inspection

Control lever 30°, n = 1000 1/min, control-rod travel = 6.8-7.5 mm

66

7. Edition

supersedes 9.82 company Volvo TD 60 B

64.9 T

PES 6 MW 100/320 RS 1004 RQV 300 ... 1400 MW 6 R Komb.-Nr. 0 403 446 104 1 - 5 - 3 - 6 - 2 - 4 = 0 - 60 - 120 - 180 - 240 - 300 $\stackrel{+}{=}$ 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,80-2,90

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	10,6+0,2	8,35 - 8,55	0,35(0,6)			
300	5,2-5,4	0,95-1,35	0,35(0,55)		
1400 500	10,6+0,2 9,3+0,1		0,5 (0,7) 0,35(0,6)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	e rated sp	eed	Lower rated	speed		Sliding	leeve travel
deflection	Control	Control rod to	dellection		Control rod travel	Degree of deflection		Control rod travel		0
jever	rod travel mm	rev/min (2a	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1400 1700	15,2-17,8 0,0-1,0				12	300	mind.7,0 5,2-5,4 480 = 2,0	500	1,3-1,4 2,8
ca. 64	10,7	1440-1450 1550-1580				39			1450	8,2

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop	limitation intermediate speed	high idle s	very characteristics (5a poed (5b)	Starting idle switchin		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 1000	0,67 bar 83,5-85,5 (81,5-87,5)	1440-1450*	LDA 1400 LDA 500	0,67bar 85,0-89,0 (83,0-91,0) 0 bar 48,0-50,0 46,0-52,0)	100 300	120,0-130,0 (117,0-133,0 9,5-13,5 (7,0-16,0))	

Checking values in brackets

* 1 mm less control rod travel than cet 2

12.85

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

VOL 6,0g

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar Gauge pressure =	bar mm (1)
Ppe. RS 1004 mit MW 6 R	0,21	0,27 0 0,67	9,7-9,8 10,2-10,5 9,3-9,4 10,6-10,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (~ maximum full-load control rod travel)

Ga

WPP 001/4 VOL 6,0 n

En

5. Edition

PES 6 MW 100/320 RS 1004 Z RQV 300 ... 1400 MW 22 0 403 446 110 supersedes 5.82 company: Volvo

engine: TD 60 B

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	itroke	(2,75-2,95)	mm (from BDC)	RW = 9	0 - 12,0 mm	
Rotational speed rev/min	tational speed Control rod Fuel delivery		Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,7+0,1	8,35-8,55	0,35(0.6)			
300 1000	4,8-5,0 9,5-9,6		0,35(0,55			
		<u> </u>			<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	revimin Goritrot roditravel mm	TIEVE!	Degree of deflection of control lever	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	11 1
max.	1400 1700	15,2-17, 0,0-1,0	8			ca.11	100 300	min.6,5 4,8-5,0		
ca.60	9,6 4,0	1140-1450 1565-159:				320-460 3a)		`		

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

1	d stop np. 40°C (104°F) 2	limitation intermediate speed	high idle s		idie switchir	ng point	travel	Control rod travel
rev/min 1	cm³/1000 strokes	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	6	cm ³ /1000 strokes 7	rev/min 8	9 mm
LUA 1000	0,50 bar 83,5-85,5 (81,5-87,5)	1440-1450*	LDA 1000	0 bar 72,0-74,0 (70,0-76,0)	100 300	120,0-150,0 (117,0-153,0 9,5-13,5 (7,0-16,0))	

Checking values in brackets

* 1 mm less control rod travel than col 2

12.85

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VOL 6,0n

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

	Pump/governor	Setting	Measurement	diminution Control rod travel- difference
3		Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
Testoil-ISO 4113	RS 1004 Z with MW 22	0,19	0,25 0 0,50	9,9-10,0 10,3-10,6 9,5-9,6 10,7-10,8

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 Vol 6,0 t 1

1. Edition

En

Testoil-ISO 4:13

PES 6 MW 100/320 RS 1004-1 RSV 325-1400 MW 2/308 0 403 476 017 supersedes companyVolvo engine TID 60 D 150 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,80-2,90 (2,75-2,95)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes . 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	10,3-10,4	7,6-7,8	0,35 (0,6)			
325	4,4-4,6	0,95-1,35	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm					Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm rev/m 9 10		Torque control Control rod travel mm 11	
loose	800	0,3-1,0				ca. 20	325 325	4,0 4,4-4,6	350 500	10,9-11,0 10,3-10,4	
ca. 54		450 = 9,3 545 = 4,0 ,3-1,7					100	min. 19			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	ii-load stop	6 Rotational- speed limitat	39 FL	iel delivery naracteristics	Starting fuel delivery 5 da Idle stop				
rev/min	emp 40°C (104°F) cm*/1000 strokes	Note changed to) rev/min	rev/min	cm ¹ /1000 strokes	rev/min	cm ¹ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
700	76,0-78,0 (74,0-80,0)		1000	82,0-86,0 (80,0-88,0)	100	120-130 (117-133)			
	,	-			325	9,5-13,5 (7,0-16,0			
	-,	-			325	9,5-13,5 (7,0-16,0)		

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH. Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 8,7j1

1. Edition

PE 6 MW 100/720 RS 1007-1 RQ 300/1250 MW 12-1

0 403 546 004 1 - 5 - 3 - 6 - 2 - 4 je 60° supersedes

company Daimler-Benz 0 M 360 A 155 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump, Settings

(3.75 - 3.95)

mm (from BDC) pu = 9.0-12.0 mm

	(3)	,73-3,337		KW = 3.0-	12,0 HHII	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250 300 750	11,2+0,1 6,9-7,1 11,2+0,1		0,35(0,6) 0,35(0,55 0,5(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin		Full-load s			cifications (4)	ldle spec	_		cifications (5)	Torque d	control 3
	Control rod	rev/min	Control rad travel rnm	Control red travel mm	rev/min	rev/min	Control red travel		Control rod travel mm	rev/min	travel
650 1550	13,1-13,9 VH 46° 0,1-1,0	650	13,5	10,2 4,0	1295-1310 1395-1425		7,0	220 300 395-4	min.9,0 6,9-7,1 35 = 2,0		

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	felivery on control lever mp 40°C (104°F)	2	Control rod stop	3	Fuel delive	ery characteristics	(2L)	Starting f	uel delivery d Contra
rev/min 1	cm³/-1000 strokes		rev/min 3		rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes / mm 7
1250	99,5-101,5 (97,5-103,5)		500		750	93,0-97,0 (91,0-99,0)		100 300	125,0-135,0 (122,0-138,0) 13,5-17,5 (11,0-20,0)

Checking values in brackets

12.85

.

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FIA 8.1 b

3. Edition

FPES 6 MW 100/720 RS 1008 roompany: i - 5 - 3 - 6 - 2 - 4 = 0 - 60 - 120 - 180 - 240 - 300 = 0.5 supersedes 5.82 roompany: i - 5 - 3 - 6 - 2 - 4 = 0 - 60 - 120 - 180 - 240 - 300 = 0.5 (0,75) engine 8360.05

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	Annie -	2,45-2,65)	mm (from BDC)	at 10,5	mm RW	
Rotational speed Control rod travel		Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
1300	12,5+0,	8,85-9,05	0,35(0,6)			
900 300	7,5-7,0 13,0+0,2		0,35(0,55 0,5 (0,7))		9

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermedia	te rated sp	eed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control	(1EAG)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control lever	rod travel	nm rev/min	of control lever	rev/min	mm (1	of control lever	rev/min	mm ③		mm
1	2	3	4	5	6	7	8	9	10	11
ınax.	1300	15,2-17,	в -	-	-	ca.14	100	min.9,5	300	0,8-0,9
	1600	0,0-1,0				ŀ	300	7,5-7,6	740	3,4
			_						1350	8,0
ca.60	11,6	1350-136	o			2442 40			}	
	4,0	1440-147				380-48	7			
	'					3				

Torque control travel = 0,5

Instructions

Test electrically unlocked starting delivery with 12 V.

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed (25) limitation intermediate speed	Fuel deli- high idle :	very characteristics (58)	Starting Idle switchli		Torque travel	Control rod
rev/min	cm³/1000 strokes	rev/min 49	rev/min cm³/1000 strokes		rev/min cm³/1000 strokes		rev/min	travel mm
1	2	3	4	5	6	7	8	9
1300	පිප,5-90,5 (86,5-92,5)	1350-1360*	800	86,5-90,5 (84,5-92,5)	100	135-145 (132-148)		13,0+0, 12,5+0,
					300	9,5-13,5 (7,0-16,0)		
					100-	-220 (80-250)		

Checking values in brackets

* 1 mm less control rod travel than col 2

12.85

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung C by Robert Bosch GmbH. D-7 Stuttgart 1, Postfach 50 Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allamagne par Robert Bosch GmbH

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 KHD 12,7 b

4. Edition

583 7.5

PE 8 MW 100/720 LS 1010 RO 300/1150 MW 17 Komb.-Nr. 0 403 548 001

supersedes 5.82 company KHD

BF 8 L 413 F 212 kW (288 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.05-3.25)

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod ² trav el rnm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750 300 500	12,2+0,1 6,3-6,5 9,9-10,0	1,2-1,6	0,35(0,6) 0,35(0,55 0,55(0,7))		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	ck (1)	Full-load s Setting po	int	Test spec	cifications (4)	Idle spec Setting p	oint		cifications 5	Torque d	control Control rod
rev/min 1	Control rod travel mm 2		ned travel	Control red travel rnm 5	rev/min	rev/min 7	Control red travel rollin 8	rev/min	travel	rev/min 11	travel
650	18,2-20,8	650	19,0	9,2	1195-1210	300	6,4	100	min.7,8	1150	10,2-10,5
1400	VH = 46° 0,0-1,0			4,0	1240-1270			300 2,0	6,3-6,5 365-405	1050 750	

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	delivery on control lever pp 40°C (104°F)	Control rod stop (3a)	Fuel deliv	ery characteristics (3b)	Starting f Idle spee	uel delivery d I Contret
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	rad travel cm ³ /1000 strokes / mm 7
LDA 750	0,74 bar 131,0-133,0 (129,0-135,0)		LDA 500	0 bar 87,5-89,5 (85,5-91,5)	100 300	136,5-146,5 (133,5-149,5) 12,5-16,5 (10,0-19,0)

Checking values in brackets

12.85

BOSCH

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KHD 12,7b -

Testat n =

500

rev/min decreasing pressure ~ in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference	
	Gauge pressure -	bar Gauge pressure :	bar mm (1)	
LS 1010 MW 17	0,16	0,50 0,74 0	10,3-10,5 11,8-11,9 12,2-12,3 9,9-10,0	

Notes

(1) when n

rev/min and gauge pressure

bar (* maximum full-foad control rod travel)

Test electrically unlocked starting delivery with 24 V.

G15

615

Testoil-ISO 4113

WPP 001/4 KHD 12.7 d 8. Edition

PE 8 MW 100/720 LS 1010 RQV 300-1150 MW 23 Komb.-Nr. 0 403 548 002

1 - 8 - 7 - 2 - 6 - 5 - 4 - 3 $0 - 45 - 90 - 135 - 180 - 225 - 270 - 315 \pm 0.5 (0.75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes 8,83 company: KHD

BF 8 L 413 F 212 kW (288 PS) / 2100 min-1

206 kW

/ 2300 min-1

A. Fuel Injection Pump Settings

mm (from BDC) RW = 9.0-12.0

(Maxidyne)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,5+0,1	13,6-13,8	0,35(0,6)			
300 500	6,3-6,5 10,2-10,8		0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed					Lower rated	speed	Sliding sleeve travel		
	rev/min Control	Control rod travel	Degree of deflection		Control rodi	Degree of deflection		Control rod travel		, 0
	rod travel mm	mm rev/min (2s)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1180 1400	15,2-17,8 0- 1,0				ca.18	100 300	min.8,0 6,3-6,5	300 500	1,4 3,2-3,8
ca.63	9,2 4,0	1160-1170 1235-1265				(3a)	430-	490 = 2,0		8,5-8,6

Torque controi travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-red Test oil ten	stop np. 40°C (104°F) (2)	limitation intermediate speed	3		idie switchir	ng point	travel	Control od travel
rev/min	cm³/1000 strokes ·	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	9 9
LDA 700	0,8 bar 136,0-138,0 (134,0-140,0		LDA 500	0 bar 94,0-96,0 (92,0-98,0)	100 300	136,5-146,5 (133,5-149,5) 12,5-16,5 (10,0-19,0) -230 (80-250)	1050 780	12,5+0,1 11,2+0,1 12,5+0,1 10,2+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.85

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Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

KHD 12,7 d -2-

Pump/governor	Setting	Measurement	diminution Control rod travet- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
LS 1010 MW 23	0,8	0,24 0,38 0	12,5-12,6 10,5-10,6 12,2-12,3 10,2-10,3

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 RVI 8.8 k

7. Edition

(4) estoil-ISO 41

PES 6 MW 100/320 RS 1016 ROV 300-1300 MW 25 Komb.-Nr. 0 403 446 123

supersedes 1,84 company: RVI

MIDR 06.02-12 engine: 125 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings 3,00-3,10 Port closing at prestroke (2, 95-3, 15) mm

mm (from BDC) RW = 9.0-12.0 mm

Rotational speed ray/min		Fuel delivery cm³/100 strokes 3	Difference cm ³ / 1C0 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	11,1+0,1	8,95-9,15	0,35(0,6)			
300 900 500	5,7-5,8 11,1+0,1 9,8-9,9		0,35(0,55 0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Port closing mark cyl. 10,5 ° after port closing

Upper rated	speed		Intermediate	e rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	11 1
max.	1300 1650	15,2-17,0 0 -1,0			2	340-600	200 300	max.7,5 5,8-5,9		
ca.62	10,1 3,9	1370-1380 1495-1525				39				

Torque Control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-red Test oil ten	distop	limitation intermediate speed			idle	fuel delivery 6	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LOA 1300	0,67 bar 89,5-91,5 (87,5-93,5)	1355-1365*	LDA 900 LDA 500	0,67 bar 85,0-89,0 (83,0-91,0) 0 bar 56,0-58,0 (54,0-60,0)	100 300 100-	95,0-105,0 (90,0-110,0) 9,5-13,5 (7,0-16,0) 230(80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.85

Testatn =

500

rev/min increasing pressure -- in bar gauge pressure

Pump/governor	Setting	•	Measurement	diminution Control rod travel difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1)
RS 1016 mit MW 25	0,23		0,67 0 0,20	10,7-10,9 11,1-11,2 9,8-9,9 10,2-10,3

Notes

(1) when n =

rev/min and gauge pressure =

bar (* maximum full-load control rod travel)

WPP 001/4 RVI 8.8 k 2

8. Edition

68101

PES 6 MW 100/320 RS 1016 RQV 300 - 1300 MW 25-1 Komb. 0 403 446 122 1 - 5 - 3 - 6 - 2 - 4 je 60° supersedes 8.84 RVI company MIDR 06.02-12 125 kW (170 PS)

*Start-of-delivery mark 8° after start of delivery with control-rod travel 10.5 mm All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (2.95-3.15)

Port closing at pres	stroke	3.00-3.10	mm (from BDC)	mm (from BDC) RW = 9.0-12.0 mm							
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6					
1400	11,1+0,1	9,1-9,3	0,35(0,6)								
300 900 500	6,2-6,3 11,1+0,1 9,8-9,9		0,35(0,55 0,5(0,7)								

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	Upper rated speed			Intermediate rated speed			speed		Sliding sleave travel	
deflection		Control rod travel	deflection		Control rod travel	Degree of deflection		Control rod travei		0
of control	rod travel	rev/min (2s)	of control lever	rev/min	mm: (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1400 1650	15,2-17, U-1,U				ca.12	200 300	max.7,5 5,8-5,9		
ca. ú 2	10,1 4,0	1455-1465 1575-1605				39	490-5	50 = 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		limitation intermediate apped	high idle s	rery characteristics (5e)	Starting Idle switchir		Torque- travel	Control (5) Control rod
rev/min	cm³/1000 strokes	rev/min 🀠	rey/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	9
LUA 1400	0,5 bar. 91,5-93,5 (89,5-95,5)	1455-1465*	LDA 900 LDA 500	0,5 bar 87,5-91,5 (85,5-93,5) 0 bar 59,0-61,0 (57,0-63,0)	100 300 100-	91,5-93,5 (89,5-95,5) 9,5-13,5 (7,0-16,0) 230(80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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RVI 8,8 k2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1016 with MW 25-1	0,23	0,5 0,2 0	10,7-10,9 11,1-11,2 10,2-10,3 9,7- 9,8

Notes

Festoil-ISO 4113

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

G21

WPP 001/4 RV1 8.0k5

1. Edition

toil-ISO 4113

PES 6 MW 100/320 RS 1016 RQV 300-1300 MW 25-5 U 403 446 165 supersedes -

company: RVI

engine:

MIDR 06.02-12F

125 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

3,00-3,10

A. Fuel injection Pump Settings

Port closing at pres	stroke 12	95-3 151	mm (from BDC)	KW = 9-14		
Rotational speed		Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rav/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1300	11,1+0,1	8,9-9,1	0,35(0,6)			
300 900 500	5,7-5,8 11,1+0,1 9 ,9-10,		0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed Degree of deflection of control rod travel mm rev/min (2s) 1 2 3		ce of Control rod travel		Lower rated Degree of deflection of control lever	deflection travel		Sliding sleeve travel rev/min mm 10 11		
max.	1300 1650	15,2-17,8 0-1,0				200 300	min.3,6 5,9-6,0		
ca.64	10,1 4,0	1370-1380 1495-1525			340-600 3a		•		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		intermediate speed sw		Starting Idle switchir	0	Torque-	Control rod	
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
LDA	0,66 bar	3	LUA	0,65 bar	100	95,0-105,0	8	9
1300	89,5-91,5 (87,5-93,5)	1370-1380*	900	86,5-90,5 (84,5-92,5)	30υ	(92,0-108,0) 9,5-13,5		
			LDA 500	0 bar 56,0-58,0		(7,0-16,0)		
				(54,0-60,0)	100-	230(80-250)		

Checking values in brackets

12.85

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^{* 1} mm less control rod travel than col. 2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

RVI 8,8k5

4113	
08	
lesto	

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1016 with MW 25-5	0,20	0,23 0 0,66	10,2-10,3 10,7-10,9 9,9-10,1 11,1-11,2

Notes:

(1) when n =

rev/min and gauge pressure =

bar (" maximum full-load control rod travel)

Start-of-delivery mark 8" after start of delivery

Test Specifications
Fuel Injection Pumps ②
and Governors

40

WPP 001/4 RVI 8,8 q

4. Edition

En

estoil-150 4:13

PES 6 MW 100/320 RS 1016 RO 750 MW 42

0 403 446 130

1 - 5 - 3 - 6 - 2 - 4

 $0 - 60 - 120 - 180 - 240 - 300 \pm 0,50(0,75)$

company RVI MIDR 06.02-12 engine: 100 kW (136 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,95-3,15)

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	14.5+0.1	13,35-13,55	0,35(0,6)		_

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check Control rod travel rev/min		Full-load speed regulation Setting point Test specifications (Control red travel rev/min rev/min		ı ,	Setting point Control Control rod travel rev/min mm			rev/min	Control rod travel mm	3			
	2		3	4	13,5 4,0 0-1,0	795-805		8	9	10	11	12	

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on 2 control fever np. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting fuel delivery Idle speed		
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes / mm 7	
700	133,5-135,5 (131,5-137,5)					100	80,0-90,0 (77,0-93,0)	

Checking values in brackets

12.85

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4

WPP 001/4 VOL 4,5 e

4. Edition

company:

PES 4 MW 100/320 RS 1102 U 403 444 107 1 - 3 - 4 - 2 U-9U-180-270 - 0,50 (0,75)

RQV 300-1100 MW 39-5

supersedes

4.85 Volvo D 45

engine: D

U 45 85 kW

04113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	Port closing at prestroke (2,75-2,95) mm (from BDC) RW = 9,0 - 12,0 mm											
Rotational speed	Control rod travel	Fuel delivery	Difference cm ² /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)						
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6						
700	12,7+0,1	11,1-11,3	0,35(0,6)									
300 1000	6,4-6,5 12,7+0,1		0,35(0,55 0,55(0,7)									

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	ieeve travel
	rev/min Control	Control rod (a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		①
of control lever	rod travel	mm rev/min (2a)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1150 1350					ca.14	300 100	6,4-6,5 min.8,0		
ca.48	11,7 4,0	1140-1150 1210-1240				320-450 ③		•		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 2b limitation intermediate speed			Starting Idle switchin	•	Torque- travel	Control cod
rev/min	cm³/1000 strokes .	rev/min 4e	rev/m i n	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
700	111,0-113,0 (109,0-115,0)	1140-1150*	1000	112,0-116,0 (110,0-118,0	300	130,0-140,0 (127,0-143,0 13,0-17,0 (10,5-19,5) 20(80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.85

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WPP 001/4 VOL 4,5 d

3. Edition

PES 4 MW 100/320 RS 1102 RUV 300-1200 MW 39-2 0 403 444 104

supersedes

engine:

company:

Volvo TD 45

4.85

82,5 kW (112 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

RW = 9.0 - 12.0 mm

troke	(2.75-2.95)										
Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rad travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6						
12,2+0,1	10,0-10,2	0,35(0,6)									
	Control rod travel mm 2 12,2+0,1 6,5-6,5	Control rod travel mm	Control rod travel Control rod travel Control rod travel Control rod travel Com ³ /100 strokes Com ³	Control rod travel	Control rod travel						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed	1		ate rated sp	eed	Lower rated	speed	•	Slidings	leeve travel
Degree of deflection of control	rev/min Control rod travel	4444	Degree of deffection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
lever	mm	rev/min (2a lever	rev/min	mm ④	iever	rev/min	mm ③	rev/min	
1	2	3	4	5	6	7	8	9	10	11
max.	1200 1450					ca.12	100 300	min.8,1 6,5-6,6		
ca.48	11,2 4,0	1240-12 1290-13				3 a	400-	550 = 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		limitation intermediate speed	Fuel deli- high idle s	very characteristics (5a)	Starting Idle switchin	0	Torque- travel	Control rod
rev/min	cm³/1000 strokes .	rev/min (4a)	rav/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
700	100,0-102,0 (98,0-104,0)	1240-1250*	1000	101,0-105,0 (99,0-107,0)		130,0-140,0 (127,0-143,0 13,0-17,0 (10,5-19,5)		
					100-2	220 (80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.85

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H2

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 RVI 5.5 a

4. Edition

En

supersedes company

7.84 RVI

enaine

MD 060212 97.8 kW

0 403 476 013

PES 6 MW 80/320 RS 1104

RSV 300-1450 MW 2/801

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1.70-1.90)

mm (from BDC) RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm/100 strokes 3	Difference cm ^{1/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	10,4+0,1	5,05-5,25	0,25(0,4)			
300 1450	4,7-4,9 9,4-9,5	0,85-1,15	0,2(0,35) 0,35(0,45)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	rated speed Control rod travel mm		Intermed	iate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	3 to rev/min 10	rque control Control rod travel mm
loose	800 X =	.,0			•	ca.20	300 250	4,8 max.6,4	900 1050 1450 1150	10,4-10,5 10,0-10,2 9,4-9,5 9,6-9,8
Ca.58	8,4 = 3,9 = 0-1,0	1515-1525 1540-1570 = 1650							1150	9,0-9,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		Speed limitar Characteristics			Starting (uel delivery 5	4a) Idle stop	
rev/min	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm·/1000 strokes 5	rev/min 6	cm/1000 strokes 7	rev/min 8	Control root travel mm 9
900	50,5-52,5 (49,5-53,5)	1515-1525	1425	54,0-56,0 (52,0-58,0)	100 300	75-85 (70-90) RW = 15 m 8,5-11,5 (7,0-13,0		

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 VOL 6,0 r 2

2. Edition

En

PES 6 MW 100/320 RS 1104 RSV 650-750 MW 4/311-2

0 403 476 018

supersed Volvo company TD 60 DG engine 86 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,80-2,90 (2,75-2,95)

mm (from BDC)RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm#100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,1+0,1	9,05-9,25	0,35(0,6)			
650	4,5-4,6	1,7-2,1	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed Control rod travel mm				Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 for rev/min	rque control Control rod travel mm	
loose	800 0,3-1,0 x = 3,0					ca.34	650 650	4,0 4,5-4,6		
ca.40	750-760 = 10,1 760-790 = 4,0 930 = 0,3-1,7						690-75	0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

()	ill-load stop	Rotational- speed limitat			Starting I	uel delivery 5	4a) idle stop		
rev/min	cm /1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm	
700	90,5-92,5 (88,5-94,5)				100 650	130-140 (127-143) 17,0-21 (15,5-22)	0		

Checking values in brackets

* 1 mm less control rod travel than cot 2

12.85

BOSCH

WPP 001/4 MB 5,7412 2. Edition

RW = 9.0 - 12.0 mm

PES 6 MW 100/720 RS 1101 ROV 300-1300 MW 34 0 403 446 124 1 - 5 -2 -3 -6 -0 - 60 - 120 - 180 - 240 - 300 + 0.50(0.75)Fuel injection test tubing 1 680 750 008
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers supersedeMB 8,7m vom 8.85 company:Daimler-Benz engine: OM 362 LA 141 kW

A. Fuel Injection Pump Settings 3,20-3,30

ort closing at prestroke mm (from BDC) (3.15-3.35)

Rotational speed ev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	11,9+0,	1 9,45-9,65	0,35(0,6			
300 800 500	6,0-6, 11,9+0, 10,2+0,	1	0,35(0,5 0,5 (0,7 0,35 (0,	D		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed	1		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod travel	mm	\sim	Degree of deliection of control		Control rod travel	Degree of deflection of control		Control rod travel		
lever	mm	rev/min	(59)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	
1	2	3		4	5	6	7	8	9	10	11
max.		15,2-17					ca.20	100	min.7,6		•
	1600	0.1-1,	0					300 460-	6,0-6,1 520=2,0		į
ca.61	10,9	1340-13	60								
	4.0	1460-14	90								
							3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		limitation	Fuel deli- high idle s	very characteristics (5e speed) (5b)	Starting Idle switching	. 0	Torque- travel	Control co
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	trave! mm
1	2	3	4	5	6	7	8	9
LDA 1300	0,7 bar 94,5-96,5 (92,5-98,5)	1340-1350*	LDA 800 500	0,7 bar 89,5-93,5 (87,5-95,5) 54,5-56,5 (52,5-58,5)	100 300 100-	80,0-90,0 (77,0-93,0) 10,5-14,5 (8,0-17,0) 230 (80-250)		

Checking values in brackets

* 1 mm less control rod travel than col 2

MB 5,7a 12

Test at n =

rev/min decreasing pressure - in bar gauge pressure

113
ISO 4
Festoil-I

Pump/governor	Setting	Measurement	Control rod travel-
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
RS 1101 with RQVMW 34	0,1	0,12 0 0,70	10,4-10,5 10,9-11,1 10,2-10,3 11,9-12,0

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7a11
2. Edition

1

PES 6 MW 100/720 RS 1101

ROV 300-1300 MW 44

0 403 446 134

1 - 5 - 3 - 6 - 2 - 4

\$ 0 - 60 - 120 - 180 - 240 - 300 + 0,50 (0,75)

supersedes MB 8,7 p
Daimler-Benz
OM 362 LA
engine 141,0 kW

Fuel injection test tubing 1 680 750 008

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

	ort closing at pres	troke	(3.15-3.35)	mm (from BDC)	RW = 9	,0 - 12,0 mm	•
	Rotational speed	ational speed Control rod Fuel delivery		Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
	rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
	300	11,9+0,1	9,35-9,55	0,35 (0,6			
22.40	300 800 500	6,0-6,1 11,9+0,1 10,0+0,1		0,35 (0,5 0,50 (0,7 0,35 (0,6			
L							

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm		Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm (1)
1	2	3	4	5	6	7	8	9	10	11
max.	1330 1600	15,2-17,8 0,1-1,0				ca. 11		min.7,6 6,0-6,1 580=2,0		
ca.64	10,9 4,0	1340-1350 1435-1465				3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed			Starting Idle switching	•	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min 8	travel mm
LDA 1300	0,7 bar 93,5-95,5 (91,5-97,5)	1340-1350*	LDA 800 LDA 500	0,7 bar 87,5-89,5 (84,5-92,5) 0 bar 51,5-53,5 (49,5-55,5)		80,0-90,0 (77,0-93,0) 10,5-14,5 (8,0-17,0)		

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung C by Robert Boach GmbH, D-7 Stuttgart 1, Postfach 50 Printed in the Federal Republic of Germany Imparisma on Republique Fédérale d'Allamagna per Robert Boach GmbH

Checking values in brackets

* 1 mm less control rod travel than col. 2



MB 5,7a 11

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Testoil-ISO 4113

Pump/governor	Setting	Measurement	Control rod trave	diminution I- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
RS 1101 with RQV MW 44	0,1	0,12 0 0,7	10 10	,4-10,5 ,9-11,1 ,0-10,1 ,9-12,0

Notes.

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

(I)

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 PER 8,8 g

2. Edition

PES 8 MW 100/720 RS 1110 RQV 500-1200 MW 29 0 403 448 120 company: Perkins engine TV 8.640 GR 185 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 3,00-3,10

RW = 9.0-12.0 mmmm (from BDC) Port closing at prestroke 2.95-3.151 Control rod travel Spring pre-tensioning (torque-control valve) **Fuel delivery** Control rod travel **Fuel delivery** Difference Rotational speed cm³/ 100 strokes cm3/100 strokes rev/min cm³/100 strokes mm mm 9.9-10.1 0.35(0.6) 1180 13,8+0,1 0,35(0,55 0.95 - 1.35500 7,3-7,4 0.5(0.7)800 13,8+0,1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediat	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	Control rod travel	mave:	Degrae of deflection of control tever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	0
max.	1200 1400	15,2-17, 0,1-1,0	8 -	-	-	ca.15	500 100	7,3-7,4 min.100		
ca.64	12,8 4,0	1220-1225 1255-1260				3a				

Torque controi travel a =

S) II

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2) rev/min cm³/1000 strokes		Rotational-speed (2b) firmitation intermediate speed rev/min	(3)		idle switchir	0	Torque-control 5 travel Control roc travel rev/min mm	
1	2	3	4	5	6		8	9
1180	99,0-101,0 (97,0-103,0		800	93,0-97,0 (91,0-99,0)	100 500 100-	19,0-21,0 mm RW 90,0-100,0 (87,0-103,0) 9,5-13,5 (7,0-15,0) 400(80-420)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.85

BOSCH

Port closing and TDC markings

Comb. - No.

... 120

° camshaft between port-closing
and TDC

at control-rod travel 10,5 mm

15°

WPP 001/4 MB 6,0d12

1. Edition

PES 6 MW 100/720 RS 1114 /RS1114-1 RQV 300-1300 MW 48 0 403 446 145 Fuel injection test tubing 1 680 750 008 supersades -

company: Daimler-Benz engine: OM 366 A 125 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,70-3,80 (3.65-3.85) mm (from BDC) RW = 9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
300	11,0+0,1 7,8-7,9 12,1+0,1	1,0-1,4	0,35(0,6) 0,35(0,5) 0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	Upper rated speed			Intermediate rated speed			speed	Stiding sleeve travel		
deflection of control	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
lever 1	mm 2	rev/min (28)	lever 4	rev/min 5	mm (4)	lever 7	rev/min 8	mm (3) 9	rev/min 10	mm 11
max.	1330	15,2-17,8				ca. 18	100	min. 9,4		
	1520	0-1,0					300	7,8-7,9		
ca. 52	10,0	1340-1350 1430-1460					330-0	600		
						39				

Torque control travel a =

mm

C. Settings for Fuel injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2 rev/min cm³/1000 strokes		Rotational speed (2b) limitation intermediate speed rev/min (49)	(3)		Starting Idle switchli rev/min	ng point	Torque-control (5 travel Control ro travel rev/min mm	
1	2	3	4	5	6	7	8	9
1300	82,0-84,0 (80,0-86,0)	1340-1350*	7 0 0	83,0-85,0 (81,0-87,0)	300 100-	80,0-90,0 (77,0-93,0) 10,0-14,0 (9,0-15,0)	1300 700 720 800 900	12,1+0, 11,8+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.85



Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 MB 6.0 d 4

1. Edition

supersedes

PES 6 MW 100/720 RS 1115 RQV 300-1300 MW 50 0 403 446 147 1-5-3-6-2-4 0-60-120-180-240-300 ± 0,50 (0,75)

companDaimler Benz engine: OM 366 LA 148 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Fuel injection test tubing 1 680 750 008

Port closing at pres	troke	3,20-3,30 (3,15-3,35)	mm (from BDC)	RW = 9 - 12	mm	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1300	11,9+0,1	9,3-9,5	0,35(0,6)			
300 600 500	5,6-5,7 11,9+0,1 10,1+0,1		0,35(0,55 0,5(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	Upper rated speed			rated sp	eed	Lower rated	speed	Sliding sleeve travel		
Degrae of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 28	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	0
max.	1340 1550	15,2-17,8 0-1,0				ca. 20		min.7,2 5,6-5,7		,
ca. 54	10,9 4,0	1340-1350 1435-1465								
						3a)	370-5	550		

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		limitation intermediate speed			Idle switching point		Torque- travel	Control (5) Control rod travel
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 1300	0,7 bar 93,0-95,0 (91,0-97,0)	1340-1350*	LDA 600 LDA 500	0,7 bar 86,5-90,5 (84,5-92,5) 0 bar 57,0-59,0 (55,0-61,0)	100 300 100-	80,0-90,0 (77,0-93,0) 10,5-14,5 (8,0-17,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

H12

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

MB 6,0 d 4

Testoil-ISO 4113

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressuré = bar	mm (1) .
RS 1115 with RQVMW 50	0,18	0,21 0 0,70	10,8-10,9 11,4-11,7 10,1-10,2 11,9-12,0

Notes.

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Ca's

Testoil-150

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 VOL 4.5 K

2. Edition

PES 4 MW 100/320 RS 1116 ROV 300-1100 MW 51 0 403 444 108 1-3-4-2

supersedes 10.84 company: Volvo-BM

TD 45-EM 85 kW

 $0-90-180-270 \pm 0,50 \ (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3.15-3.35)

mm (from BDC) RW = 9.0-12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
300 1000	12,5+0,1 5,8-5,9 12,5+0,1 10,5+0,1		0,35(0,6) 0,35(0,55 0,55			4

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed	4	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	of control	rev/min 5	Control rad travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	0
ınax.	1100 1350	15,2-17,8 U-1,0			ŧ	ca.12	300 100	5,8-5,9 min.8,0		
ca.52	11,5 4,0	1140-1150 1200-1230				③	330-4	50		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed	Fuel deli- high idle :	very characteristics (5e)	Starting Idle switchir	<u> </u>	Torque- travel	Cantrol rod	
rev/min	cm³/1000 strokes	rev/min 46	rev/min	rev/min cm³/1000 strokes		rev/min cm³/1000 strokes		travel mm	
1	2	3	4	5	6	7	8	9	
LDA 700	0,75 bar 116,0-118,0 (114,0-120,0)	1140-1150*	LDA 1000 LDA 700	0,75 bar 117,0-121,0 (114,5-123,5) 0 bar 79,0-81,0 (76,5-83,5)	100 300 100-	150,0-160,0 (147,0-163,0) 13,0-17,0 (10,5=19,5) 220(80-250)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.85

D. Adjustment Test for Manifold Pressure Compensator

VOL 4,5k

Test at n =

700

rev/min decreasing pressure - in bar gauge pressure

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Pump/governor	Setting	Measurement	diminution , Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1116 with MW 51	0,26	0,52 0 0,75	10,6-10,7 12,4-12,6 10,5-10,6 12,5-12,6

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

HAS

WPP 001/4 PEN 6.1.i.

1. Edition

PES 6 MW 100/320 RS 1119 ROV 350-1050 MW 54-1 0 403 446 157

supersedes

companyVolvo engine: TD 61

111 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings 3,0-3,10 Port closing at prestrake (2,95-3,15)

mm (from BDC) Q_12 mm DW

Port closing at pres	stroke (2	2.95-3.15)	mini (irom goc)	9-12 mm	RW		
Rotational speed rev/min	Control rad travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6	
700	12,3+0,1	10,8-11,0	0,35 (0,6)			
300	6,3-6,4	1,6-2,0	0,35 (0,5)			
1000	12,3+0,1		0,35 (0,7	þ	}	•	
700	10,9+0,1				1		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed		intermedia	te rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	mm	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3		0
max.	1120 1280	15,2-17,8 0,1-1,0	3		a	ca. 16	350 100	6,3-6,4 min. 7,8		
ca. 45		1090-1100 1150-1180				ì	370-	-450		
						3 9				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed (2b) limitation intermediate speed			Starting idle switchir		Torque- travel	Control (5)
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	trave/i mm
1	2	3	4	5	6	7	8	9
LDA 700	0,7 bar 108,0-110,0 (106,0-112,0		LDA 1000 LDA 700	0,7 bar 109,0-113,0 (107,0-115,0 0 bar 82,0-84,0 (80,0-86,0)		19-21 RW 140-160 (137-163) 16,0-20,0 (14,0-22,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.85

Kfz-Ausrüstung part 1, Postfach 50 Printed in the Federal Republic of Germany semanne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

PEN 6,1 i

Testoil-ISO 4113

Pump/governor	Setting	Measurement	diminution , Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1119 with MW 54-1	0,30	0,45 0 0,70	11,1-11,2 12,0-12,3 10,9-11,0 12,3-12,4

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

40

WPP 001/4 PEN 6,1 a

1. Edition

En

Testoil-ISO 4113

PES 6 MW 100/320 RS 1119-2 RSV 325...1250 MW 0 A 308 0 403 476 032 supersedes company engine TD 61 AW 132 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,1-3,2 (3,05-3,15)

mm (from BDC)

	Rotational speed rev/min 1	travel	Fuel delivery cm/100 strokes 3	Difference cm ^{-y} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
J	1000	10,8-10,9	8,45-8,65	0,35(0,6)			•
	325	6,1-6,2	1,2-1,6	0,35(0,55)			
				1			

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

	llection travel travel control mm mm rev/min			hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rad travel mm	3 To rev/min 10	rque control Control rod travel mm
loose	800	0,3-1,0				ca. 22	325 325	5.5 <u>~</u> 5.6		
ca. 49		00 = 9.8 70 = 4.0 0.3-1.7					100	min. 19		,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

C	ill-load stop	6 Rotational- speed limitat		ref delivery paracteristics	Starting I	uel delivery 5	4a) Idle stop		
Test oil to rev/min 1	emp 40°C (104°F) cm/1000 strakes 2	Note changed to) rev/min	rev/min 4	cm //1000 strokes	rev/min	cm/1000 strokes 7	rev/min 8	Control root travel mm	
1000	84,5-86,5 (83,5-89,5)				100	160,0-180 (157,0-183	,0 ,0)		
		·			325	12,0-16, (9,5-18,5			

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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WPP 001/4 PEN 6,0 d
1. Edition

En

stoil-ISO 4113

PES 6 MW 100/320 RS 1119-2 RSV 325-1250 MW 2A 308 0 403 476 033 supersedes_

company Volvo-Penta TD 61 APP 147 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,45-2,65)

mm (from BDC)

Rotational speed rev/min	Control rod travet	Fuel delivery cm ^{1/100} strokes 3	Difference cm ^{-y} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm //100 strokes 3	Spring pre-tensioning (torque-control valve) rom 6
1000	10,8-10,9	8,5-8,7	0,35 (0,6)			
325	6,1-6,2	1,2-1,6	0,35 (0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	er rated speed		Interme	diate rated	speed	0		Control rod		rque control Control rod
Degree of deflection	travel	travel				Control- lever deflection	rev/min	travel mm	rev/min	travel mm
of control lever	mm 2	3	4	5	6	in degrees	8	9	10	11
loose	800	0,3-1,0					·			
ca.22		300 = 9,8 370 = 4,0 ,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

II-load stop	6 Rotational- speed limitat			Starting fuel delivery 5 48 Idle stop				
emp 40°C (104°F) cm ³ /1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min 6	cm71000 strokes 7	rev/min 8	Control rod travel mm 9	
85,0-87,0 (83,0-89,0)				100				
				325	12,0-16,0 (9,5-18,5)			
	cm ¹ /1000 strokes 2 85,0-87,0	speed fimitat Note changed to) rev/min 3	mp 40°C (104°F) cm//1000 strokes 2 85,0-87,0	speed limitat Note changed to) rev/min cm³/1000 strokes 2 3 characteristics changed to 5 changed to 5 cm³/1000 strokes 5	speed limitat Note changed to) rev/min 2 rev/min 6 rev/min 6 100 strokes 100	speed limitat Note characteristics rev/min cm ^{1/1000} strokes 2 100 cm ^{1/1000} strokes 5 7 100 160,0-180, 157,0-183,	speed fimilat Characteristics 'Gle Characteristics Voltage Characteristics V	

Checking values in brackets

* 1 mm less control rod travel than cot 2

10.85

H19

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WPP 001/4 PEN 6,1 c

1. Edition

En

Festoil-ISO 4113

PES 6 MW 100/320 RS 1119-2 RSV 300-1050 MW 4 A 308-2 0 403 476 031 supersed solvo-Penta Volvo-Penta company TD 61 ACE engine 112 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,5-2,6 (2,45-2,65)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travet mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,8-10,9	8,5-8,7	0,35(0,6)			
300	6,1-6,2	1,2-1,6	0,35 (0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	tion travel travel		Intermed	drate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 to	rque control Control rod travel mm
loose	800	0,3-1,0				ca. 25	300 300	5,6 - 5,7		
ca.61	1090-1100 = 9,8 1140-1170 = 4,0 1250 = 0,3-1,7						100	min. 19		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	III-load stop	6 Rotational- speed limitat		iel delivery paractenstics	Starting l	luel delivery 5	4a Idle stop	
Test oil to rev/min	cm ¹ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ^{1/1} 000 strokes	rev/min	cm*1000 strokes	rev/min	Control rod travel mm
1000	85,0-87,0 (83,0-89,0)				(160,0-180, 157,0-183, 12,0-16,0 (9,5-18,5)))	
						(0,0		

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

40

WPP 1/4 PEN 6,1 b

1. Edition

En

estoil-ISO 4113

PES 6 MW 100/320 RS 1119-2 RSV 650-750 MW 4 / 311-1 0 403 476 034

supersedes

company Volvo-Penta engine TD 61 G

83 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,5-2,6 (2,45-2,65)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ^{-/} 100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm·/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,5-11,6	8,9-9,1	0,35(0,6)			
650	6,1-6,2	1,7-2,1	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

11 1 1	deflection of control mm mm rev/min		Interme	ediate rated	d speed	Control		Control rod travel	3 To rev/min 10	rque control Control rod travel mm 11
loose	800	0,3-1,0				ca. 34	650	5,6-5,7	350 500	12,0-12,1 11,5-11,6
ca.40	765-79	0 = 10,5 $5 = 4,0$ $0,3-1,7$					100	min. 19		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(A)	ill-load stop	6 Rotational speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	(4a) Idi	e stop
Test oil to rev/min	emp 40°C (104°F) cm ¹ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm 1/1000 strokes 5	rev/min	cm ⁴ 1000 strokes 7	rev/min 8	Control rod travel mm 9
700	89,0-91,0 87,0-93,0)				100 (160,0-180,0 157,0-183,0)))	
					650	17,0-21,0 (15,5-22,5		

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. 0-7000 Stuttgart 1. Printed in the Federal Republic of Germany. Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

40 WPP 001/4 PEN 6,1 e

1. Edition

En

PES 6 MW 100/320 RS 1119-2 RSV 650-750 MW 4/311-2 0 403 476 035 supersedes-

company Volvo -Penta TID 61 AG 102 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,5-2,6

Port closing at prestroke

(2,45-2,65)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,0-12,1	9,3-9,5	0,35(0,6)			
650	6,2-6,3	1,7-2,1	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

16 1 1	ilection mm mm rev/min		Intermed	hate rated	speed	Control- lever deflection in degrees 7		Control rod travel		rque control Control rod travel mm
loose	800	0,3-1,0				ca. 24	650	6,2-6,3		
ca.41,5	750-760 765-795 950 = 0) = 11,0 5 = 4,0 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F)	Rotational- speed limitat		el delivery aractenstics	Starting I	uel delivery 5	4a Idi	e stop Control rod
rev/min 1	cm*/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm /1000 strokes 7	rev/min 8	travel mm 9
700	93,0-95,0 (91,0-97,0)			•	100 650	160,0-180, 157,0-183, 17,0-21,0	0)	
						17,0-21,0 (15,5-22,5)	

Checking values in brackets

* 1 mm less control rod travelethan col 2

10.85



Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 PEN 6,1p1

1. Edition

Εn

PES 6 MW 100/320 RS 1119-2 RSV 325-1400 MW 2 A 314-1 0 403 476 038

supersedes companyOlvo-Penta engine TD 61 A 147 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,50-2,60 (2,45-2,65)

Port closing at prestroke (2.45-

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm/100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm	Fuel delivery cm ⁻ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,9+0,1	8,7-8,9	0,35 (0,6)			
325	6,0-6,1	1,2-1,6	0,35(0,55)			
						·

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,0				ca. 17	325 325	5.5-5.6 6,0-6,1		
ca. 51		450=10,0 535= 4,0 ,3-1,7					100	min. 19		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	il load stop	6 Rotational- speed limitat	39 Fu	uel delivery paracteristics	Starting (uel delivery 5	(4a) Irj	e stop
rev/min	emp 40 C (104"F) cm ¹ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes	rev/min	cm/1000 strokes	rëv/min 8	Control rod travel mm
LDA 1000	0,9 bar 87,0-89,0 (85,0-91,0)		LDA 500	0 bar 49,0-51,0 (47,0-53,0)	100 325	140-160 (137-163) 12,0-16,0 (9,5-18,5		

Checking values in brackets

* 1 mm less control rod travel than cot 2



H23

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

550

rev/min decreasing pressure – in bar gauge pressure

	· ·)	
()	SC 4	1	
1001	グリー		

Pump/governor	Setting		Measurement	diminution , Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1)
RS 119-2 with MW 2 A 314-1	0		0,9 0,22 0,33	9,4-9,5 10,9-11,0 9,6-9,7 9,8-9,9

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

40

WPP 001/4 MB 6,0 d 1

1. Edition

_En

supersedes Daimler-Benz compan OM 366 A engine 125 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-1S

3,70-3,80 (3,65-3,85

mm (from BDC)

RW = 9,0 - 12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm1/100 strokes	100 strokes	mm	cm 1/100 strokes	mm
1	2	3	4	2	3	6
1300	10,7-10,8	8,0-8,2	0,35(0,6			
350	7,2-7,4	0,8-1,2	0,35(0,5			
1700			0,5 (0,7		c	
Fuel	injection to	st tubing 1	6\$0 750 008		1	1

Adjust the fuel delivery from each ouilet according to the values in

B. Governor Settings

1 Uppe	er rated speed	rev/min	Interme	diate rated	speed	4	Lower	rated speed	(3) 10	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
loose	800	0,3-1,0		· · · · · · · · · · · · · · · · · · ·		ca.16	350	7,3	970	10,8-10,9
ca. 58	1355-13	350 = 9,7 385 = 4,0 130 = 4,0					350 445-505	7,2-7,4 2,0	850 750	11,7-11,9 12,3-12,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ill-foad stop	6 Rotational- speed limitat		uel delivery paracteristics	Starting I	luel delivery 5	43 ld	e stop
Test oil te rev/min 1	emp 40°C (104°F) cm ¹ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm v1000 strokes	rev/min	Control rod travel mm
300	80,0-82,0 (78,0-84,0)		700	80,0-82,0 (78,0-84,0)	100	80,0-90,0 (77,0-93,0))	0,5-1,0 mm
			825	80,5-82,5 (77,5-85,5)	350	8,0-12,0 (7,0-14,0	1	efore s

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

11.85

WPP 001/4 MB 6,0 d

1. Edition

PES 6 MW 100/720 RS 1124 RSV 350-1200 MW 1 A 316-1 0 403 476 029 supersedes company Daimler-Benz OM 366 A 110 kW

1-5-3-6-2-4 je 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

ont closing at prestroke (3,65-3,85)

mm (from BDC)

RW = 9.0 - 12.0 mm

Εn

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	9,8-9,9	7,6-7,8	0,35(0,6)			
350	6,8-6,9	1,0-1,4	0,35(0,5)			
700	10,4-10,5		0,5 (0,7)			
900 Fuel inje	10,1-10,3 ction test		50 008			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	110	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,0				ca.16	350 445-505	6,8-6,9 2,0		9,8-9,9 10,8-10,9 10,4-10,6
ca. 56	1255-12	250 = 8,8 $285 = 4,0$ $330 = 4,0$								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp_40°C (104°F)	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	43 ld	le stop Control rad
revimin	cm/1000 strokes	changed to) rev/min 3	rev/min 4	cm/1000 strokes 5	rev/min 6	cm /1000 strokes 7	rev/min 8	travel mm 9
200	76,0-78,0 (74,0-80,0)		700	72,0-74,0 (70,0-76,0)	100	80,0-90,0 (77,0-93,0)	0,5-1,0 mm
			900	76,0-78,0 (73,0-81,0)	350	10,0-14,0 (9,0-15,0	1	efore st
							'	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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WPP 001/4, MB 5,7 a 13 1. Edition

En

PES 6 MW 100/720 RS 1125-1 RSV 600-1300 MW 0A 320 0 403 476 049 1-5-3-6-2-4 je 60°

supersedes_

company Daimler-Benz OM 362 LA

134 kW

Fuel injection test tubing 1 680 750 008
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3,15-3,35)

mm (from BDC)

RW 9,0 - 12,0 mm

estoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm\$100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1280	11,8-11,9	9,2-9,4	0,35(0,6)			
600 800	5,6- 5,7 11,8-11,9	1,0-1,4	0,35(0,5) 0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	Control rod Control rod travel mm rev/min 2 3		Interme			Control- lever deflection in degrees 7	Lowe rev/min 8	rated speed Control rod travel mm 9	(3) To	rque controi Controi rod travei mm
loose	800	0,3-1,0	1			ca.16	600	5,6-5,7		
ca.59							100	min. 19		
23	1400-14	340=10,8 130= 4,0),3- 1,7								

The numbers denote the sequence of the tests Set idle-speed auxiliary spring at 2 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational-speed limital 3a Fuel delivery characteristics			Starting t	fuel delivery 5	4a Idle stop		
Test oil to rev/min 1	emp. 40°C (104°F) cm ² /1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes	rev/min	cm ² /1000 strokes	rev/min	Control rod 1 travel mm 9	
1280	92,0-94,0 (90,0-96,0)		800	91,0-95,0 (89,0-97,0)	100	80,0-90,0 (77,0-93,0)			
					600	10,0-14,0 (8,0-16,0)			
Note:	Test elec. unl	pcked start	ng fu	el delivery (EE	s) wit	n 24 Volts			

Checking values in brackets

* 1 mm less control rod travel than col 2

11.85

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2

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MB 3,71:1

1. Edition

PE 6 MW 100/720 RS 1126 RQ 300/1250 MW 12-1 0 403 546 006 1-5-3-6-2-4 je 60° supersedes -

company Daimler-Benz

engine OM 360 A 155 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,80-3,90 Port closing at prestroke (3,75-3,95)

mm (from BDC)RW = 9-12 mm

Cort Closing Ct prose	(3,/2-3,93/		(W = 3-12	11811	
Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,4+0,1	9,95-10,15	0,35(0,6			
300 750	8,3-8,4 12,4+0,1		0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	ck Contro travel		1	Full-load s Setting po	•	-	cifications (4)		Test spe rev/min	cifications 5 Control rod travel mm	Torque o	Control rod (3
650	13, VH	1-1 46°	3,9	650	13,5	11,4 4,0 0-1	1295-1310 1395-1425 1550		300 220	8,3-8,4 min.10,4 35 = 2,0		

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor o	Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop	3	Fuel delivery characteristics			Starting for spee	Control
rev/min	cm ³ /-1000 strokes	;	rev/min 3		rev/min 4	cm³/-1000 strokes 5		rev/min 6	rad travel crn ³ /1000 strokes / mm 7
1250	99,5-101,5 (97,5-103,5)		500		750	93,0-97,0 (91,0-99,0)		3 00	125,0-135,0 (122,0-138,0) 13,5-17,5 (11,0-20,0)

Checking values in brackets

11.85

BOSCH

WPP 001/4 MB 5.7a14

1. Edition

PES 4 MW 100/720 RS 1127 ROV 300-1300 MW 48-1 0 403 444 110 1-3-4-2 $0-90-180-270 \pm 0,50 (0,75)$ supersedes

Daimler-Benz OM 364 A

85 kW

All lest specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Fuel injection test tubing 1 680 750 008

_	3,70-3,80				_			
Port closing at prestroke	(3.65-3.85)	mm (from BDC)	RW	=	9	-	12 mm	ì
								_

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	11,7+0,1	8,3-8,5	0,35 (0,6			
300	7,9-8,0	1,0-1,4	0,35 (0,5			
750 600	12,0+0,2 12,5+0,		0,5 (0,7 0,5(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed			Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
deflection of control	rev/min Control rod travel mm	Control rod travel mm rev/min	(9) (20)	Degree of deflection of control lever	rev/min		Degree of deflection of control rev/min Control rod travel			rev/min	0
1	2	3		4	5	6	7	8	9	10	11
max.	1330	15,2-17	,8				ca. 21	100	min. 9,5		
	1550	0 - 1,	0					300	7,9-8,0		
ca. 54	10,7 4,0							220 (500		
							③	330-0	000		 - -

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ros Test oil ten rev/min	Rotational-speed 2b fue bigg of the speed 2b f			very characteristics 5a poeed 50 cm ³ /1000 strokes	Idle	ng point	Torque- travel	Control od travel mm
1300	83,0-85,0 (81,0-87,0)	3 1340-1350 *	750 600	80,5-83,5 (78,0-86,0) 82,0-84,0 (80,0-86,0)	100 300 100-	80,0-90,0 (77,0-93,0) 10,0-14,0 (8,0-16,0) 230 (80-250)	600 750 950	9 11,7+0 12,5÷0 12,5+0 11,7+0 12,5+0

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.85

Geschäftsbereich KH Kundendienst. Kfz-Ausrustung C by Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50 Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH

J5

WPP 001/4 MB 6.0 d 7

1. Edition

En

PES 6 MW 100/720 RS 1130 RSV 300-1150 MNOA 318 0 403 476 037 1-5-3-6-2-4 je 60°

supersedes -Daimler Benz сотрапу OM 366 A

125 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

143

7

Testoil-iso

3,70-3,80 (3.65-3.85)

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/min	mm 2	cm/100 strokes	cm ⁻ / 100 strokes 4	mm 2	cm /100 strokes	mm 6
1280	11,0-11,2	8,2-8,4	0,35 (0,6)			
300 750	6,9-7,0	1,0-1,4	0,35 (0,5) 0,5 (0,7)			
Fuel in	ection tes	t tubing 1 680	750 008			

Adjust the fuel delivery from each outlet according to the values in C

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	diate rated	speed 6	Contro' leve: deilection in degrees 7		rated speed Control rud travel mm	11 9 1	rque control Controt rod travel mm
loose	800	0,3-1,0				ca. 29	300 100	6,9-7,0 min. 19	1280 750	11,0-11,2 11,7-11,8
a. 59	1380-14	30 = 10,0 10 = 4,0 0,3-1,7							825	11,4-11,6

The numbers denote the sequence of the testSet idle-speed auxiliary spring at 2 mm control-rod travel,

C. Settings for Fuel Injection Pump with Fitted Governor

	Rotational speed limitat			Starting fuel delivery 5 4a idle stop tidle				
o 40°C (104°F) n //1000 strokes	Note changed to 1 rev/min 3	rev/min 4	cm/1000 strokes 5	rev/min	cm/1000 strokes 7	rev/min 8	travel mm	
2,0-84,0 0,0-86,0)		750	80,0-82,0 (77,0-85,0)	100				
				300	10,0-14,0 (8,0-16,0)			
n	2,0-84,0	changed to 1 rev/min 3	changed to) rev/min 3 rev/min 4 750	changed to) rev/min cm//1000 strokes 3 750 80,0-82,0	changed to 1 rev/min 3 rev/min 6 cm 1/1000 strokes cm 1/1000 strokes 5 rev/min 6 cm 1/1000 strokes 5 rev/min 6 for 1/1000 strokes 5 for	changed to rev/min 3 rev/min cm/1000 strokes rev/min cm/1000 strokes 5 rev/min cm/1000 strokes 7	rev/min 3 rev/min 6 rev/min 6 rev/min 6 rev/min 8 rev/min 8 rev/min 6 rev/min 7 rev/min 8 rev/min 6 rev/min 8 rev/min 6 rev/min 8 rev/min 6 rev/min 8 rev/min 6 rev/min 6 rev/min 8 rev/min 8 rev/min 6 rev/min 8 rev/min 6 rev/min 7 rev/min 8 rev/mi	

Checking values in brackets

* 1 mm less control rod travel than coi 2

11.85

J6

27

estoil-ISO

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 6.0d11

1. Edition

PES 6 MW 100/720 RS 1131 . . . ROV 300-1300 MW 67 11 -0 403 446 168

supersedes company:

1-5-3-6-2-4 je 60°

engine

Daimler-Benz OM 366 LA 150 kW

Fuel injection test tubing 1 680 750 008

All test specifications are valid for Boach Fuel injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

3,70-3,60 3,65-3,85) mm (from BDC) RW = 9.0 - 12.0 mmPort closing at prestroke Control rod travel Spring pre-tensioning (torque-control valve) **Fuel delivery** Difference **Fuel delivery** Rotational speed Control rod cm³/ 100 strokes cm³/100 strokes cm³/100 strokes mm mm rev/min mm 6 1300 11,9+0,1 9,3-9,5 0,35(0,6) 6,1-6,2 300 1,0-1,4 0,35(0,55) 600 11,9+0,1 0,5(0,7)500 10,1+0,1

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s			Intermediate	rated sp		Lower rated	speed	1	Sliding s	leeve travel
deflection	revimin Control	travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		
of control lever	rod travel	mm rev/min 2a	of control lever	rev/min		of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1340 1550	15,2-17,8 0,0-1,0				ca. 15		min.7,6 6,1-6,2		i
ca. 52	10,9 4,0	1340-1350 1440-1470				350-550				
						3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Futi-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 20 (imitation intermediate speed			Starting fuel delivery 6 Idle ewitching point		Torque- travel	control (5)
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 1300	0,7 bar 93,0-95,0 (91,0-97,0)	1340-1350*	LDA 600	0,7 bar 85,0-89,0 (83,0-91,0)	100 300	80,0-90,0 (77,0-93,0) 10,0-14,0 (7,5-16,5)		
			LDA 500	0 bar 52,0-54,0 (50.0-56.0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

MB 6,0 d 11

Testatn =

500

rev/min increasing pressure – in bar gauge pressure

C	7	7
7 7 7	_ _ _	
)	
U	2	
1	3	
C	3	
		0 411

ł		Control rod travel-		
Gauge pressure = bar	Gauge pressure = bar	mm (1) .		
0,37	0,47 0 0,70	10,5-10,6 11,4-11,7 10,1-10,2 11,9-12,0		
		0,37		

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

40

WPP 001/4 PEN 6,1m

1. Edition

En

supersedes - Volvo-Penta TD 61 ACE 112 kW

PES 6 MW 100/320 RS 1132 RSV 300-1050 MW 4 A 308-2 0 403 476 043

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,90-3,00 (2,85-3,05)

mm (from BDC)

(torque control valve)
mm
6

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,0				ca. 29	300 300 100	5,6-5,7 6,1-6,2 min. 19		
ca. 69	1140-1	100 = 9.8 170 = 4.0 0.3-1.7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational- speed limitat		Fuel delivery characteristics		Starting fuel delivery 5		e stop
Test oil to rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm 11000 strokes 5	rev/min 6	cm 41000 strokes 7	rev/min 8	Control root travel mm 9
1000	85,0-87,0 (83,0-89,0)				300	140-160 (137-143) 12,0-16,0 (9,5-18,5		

Checking values in brackets

* 1 mm less control rod travel than col 2

11.85

BOSCH

Geschaftsbereich KH. Kundendienst. Klz-Ausrustung. < 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany. Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 PEN 6,1p

1. Edition

En

PES 6 MW 100/320 RS 1132 RSV 325-1400 MW 2 A 314-1 0 403 476 046 1-5-3-6-2-4 ie 60 °

supersedes companyolvo-Penta engine TD 61 A 147 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,90-3,00

Port closing at prestroke

(2.85 - 3.05)

mm (from BDC) RW 9-12 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm/100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,9+0,1	8,7-8,9	0,35 (0,6)			
325	6,0-6,1	1,2-1,6	0,35(0,55)			
500	9,5-9,6					

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3) To rev/min 10	rque control Control rod travel mm
loose	800	0,3-1,0				ca.22	325	5,5- 5,6		
ca.58	1530-1	450 = 10,0 550 = 4,0 0,3-1,7					325 100	6,0-6,1 min. 19		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp 40°C (104°F)	6 Rotational- speed limitat	39 Ft.	el delivery paracteristics	Starting f	uel delivery 5	4a Idle stop Control rod		
rev/min	cm ¹ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm/1000 strokes 5	rev/min	cm 41000 strokes 7	rev/min travel 8 9	mm	
LDA 1000	0,9 bar 87,0-89,0 85,0-91,0)		LDA 500	0 bar 50,0-52,0 (48,0-54,0)	100	140-160 (137-163)			
					325	12,0-16,0			
	1					(9,5-18,5)			

Checking values in brackets

* 1 mm less control rod travel than col 2

11.85

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.

6. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Alfemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

•		1
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I	<u></u>	I
1	4	I
I	0	I
ı	\mathcal{L}	İ
I	S	I
ı		ı
ı		I
ł	Q	l
1	7	I
ı	es S	I
ł		I
ı	5	ı

Pump/governor	Setting		Measurement	diminution , difference		
	Gauge pressure =	bar	Gauge pressure = bar	mm (1)		
RS 1132 with MW 2 A 314-1	0		0,22 0,32 0,90	9,5-9,6 9,7-9,8 9,9-10,0 10,9-11,0		

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

311

40

WPP 001/4 PEN 6,1 o

1. Edition

En

10 h

PES 6 MW 100/320 RS 1132 RSV 325-1250 MW 2 A 314-2 0 403 476 039 1-5-3-6-2-4 je 60°

supersedes compan, Volvo Penta TD 61 AW 132 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,85-3,05)

mm (from BDC)

RW 9-12 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm1/100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) m:m 6
700	11,3+0,1	9,5-9,7	0,35(0,6)			4
325	5,6-5,7	1,2-1,6	0,35(0,55	1		
700	9,8-9,8					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	fiate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm 9	11 ~ /	rque control Control rod travel mm 11
loose	800	0,3-1,0				ca. 20	325 325 100	5,1-5,2 5,6-5,7 min. 19		
ca. 50	1360-1	300 = 10,3 390 = 4,0 0,3-1,7					100	min. 19		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

			4a) Idle stop		
rev/min cm//1000 strokes 4 5	rev/min 6	cm ¹ /1000 strokes	rev/min 8	Control root travel mm	
LDA 0 bar 68,5-70,5 (66,5-72,5)	100 325	140-160 (137-163) 12,0-16,0 (9,5-18,5			
d	LDA 0 bar 700 68,5-70,5	rev/min dm//1000 strokes rev/min 6 LDA 0 bar 100 68,5-70,5 (66,5-72,5)	rev/min cm/1000 strokes rev/min cm/1000 strokes 7 LDA 0 bar 100 140-160 (137-163)	rev/min 4 5 rev/min 6 7 8 LDA 0 bar 100 140-160 (137-163)	

Checking values in brackets

* 1 mm less control rod travel than col 2

11.85

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérate d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

PEN 6,1 0

Test at n

700

rev/min decreasing pressure - in bar gauge pressure

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	13
	41
	S
	-
	350
	Tes
	-

Pump/governor	Setting	Measurement	diminution , Control rod travel- difference
	Gauge pressure =	bar Gauge pressure =	bar mm (1)
RS 1132 with MW 2 A 314-2	0	0,42 0,30 0,70	9,8-9,9 11,1-11,2 10,2-10,3 11,3-11,4

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

40

WPP 001/4 PEN 6,11

En

1. Edition

supersedes -PES 6 MW 100/320 RS 1135 Volvo-Penta company RSV 325-1250 MW 2 A 308-3 TD 61 AW 0 403 476 048 engine 125 kW £ > All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers OOTED TO A. Fuel Injection Pump Settings 2,90-3,00 mm (from BDC) RW = 9-12 mm Port closing at prestroke (2,85-3,05)Spring pre-tensioning Control rod Fuel delivery **Fuel delivery** Difference Control rod Rotational (torque-control valve) travel travel speed cm^y cm1/100 strokes cm¹/100 strokes 100 strokes mm rev/min 6 800 11,0+0,1 8,5-8,7 0,35(0,6)8,7-8,8 1,7-2,1 0,35 (0,55) 325

0,5 (0,7)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

11,0+0,1

1000

	r rated speed Control rod travel mm	Control rod travel mm rev/min		diate rated		Control- lever deflection in degrees		rated speed Control rod travel mm	11 3 1	rque control Control rod travel mm
loose	800	0,3-1,0	4]5	[6	ca. 24	325 100	8.7-8.8 min. 19		
ca. 52	1340-1	300 = 10,0 370 = 4,0 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop			speed limitat Characteristics			Starting fuel delivery 5		
Test oil te rev/min 1	emp 40°C (104°F) cm /1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm 41000 strokes 5	rev/min	cm / 1000 strokes 7	rev/min 8	Control rol travel mm 9
	85,0-87,0 83,0-89,0)		100	87,5-91,5 (85,5-93,5)	100 325	150-160 (147-163) 17,0-21,0 (15,0-24,0)		

Checking values in brackets

* 1 mm less control rod travel than col 2

11.85

BOSCH

WPP 001/4 PEN 6,1p3

PES 6 MW 100/320 RS 1136 RQV 350-1100 MW 54-2 0 403 446 167 company 01 vo engine. TD 61 111 kt

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pre	stroke	(2,95-3,15)	mm (from BDC)	RW	= 9,0 - 12,0 n	m ·
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700 300 1000 700	12.3+0.1 6,3-6,4 12,3+0,1 10,9+0,1	1,6-2,0	0,35(0,6) 0,35(0,5) 0,35(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		in	ntermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
Degree of deflection	rev/min Control rod travel		기에	Degree of deflection of control		Control rod travel	Degree of deflection		Control rod traval	Sindings	1
13791	mm	rev/min (2		ever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4		5	6	7	8	9	10	11
max.	1150 1350	15,2-17,8 0-1,0	8				ca.16	100 350	min.7,8 6,3-6,4		
ca.48	11,0 4,0	1140-115 1200-123					370-450				
							3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter rev/min	d stop mp. 40°C (104°F) 2	Rotational-speed (2b) timitation intermediate speed rev/min (49)	high idle :	cm ³ /1000 strokes	idle switchi	fuel delivery 6 ng point cm³/1000 strakes 7	Torque- travel rev/min	Control 5 Control rod travel mm
LDA 700	0,7 bar 108,0-110,0 (106,0-112,0	1140 - 1150*)	LDA 1000 LDA 700	0,7 bar 109,0-113,0 (107,0-115,0) 0bar 82,0-84,0 (80,0-86,0)		140-160 (137-163) 16,0-20,0 (14,0-22,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.85

D. Adjustment Test for Manifold Pressure Compensator

PEN 6,1p3

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel-
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1136 with MW 54-2	0,3	0,45 0 0,70	11,1-11,2 12,0-12,3 10,9-11,0 12,3-12,4
			·

Notes

Stoil-ISO 4113

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

40

WPP 001/4 FIA 13,8 u

1. Edition

En

PE 6 P 120 A 720 RS 167

Komb.-Nr. 9 400 097 200

RSV 350-1000 P 1/378 R

supersedes

company engine Fiat 8210.02

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0 - 2,1 (1,95-2,15)

mm (from BDC)Cy1.1

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ¹ /100 strokes 3	Difference cm ¹⁷ 100 strokes 4	Control rod trävei mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,8+0,1	16,6-16,8	0,5 (0,9)			
350	6,9-7,1	1,5-2,1	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	diate rated	speed 6	Control- tever deflection in degrees 7		rated speed Control rod travel mm	3 To rev/min 10	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,5	-	-	4	ca.25	350 100	6,5 min.19,0	500	10,8-10,9 10,8-11,0 11,2-11,4
ca.53	9,8 4,0 1200	1040-1050 1080-1110 0,3-1,7					350 390-45	6,9-7,1 0 = 2,0	400	11,2-11,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ili-load stop	6 Rotational- speed limitat	39 Ft	uel delivery naracteristics	Starting I	fuel delivery 5	43 ld	e stop
revimin	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm V1000 strokes 7	rev/min 8	travel mm
1000	166,0-168,0 (163,0-171,0)	1040-1050*	500	127,5-133,5 (124,5-136,5)	100	270,0-290 (266,0-294		-
					350	15,0-21, (10,0-24,		
		_						

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

BOSCH

Geschaftsbereich KH. Kundendrenst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH. Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 11,0 b
8. Edition

En

PES 6P 100A 820LS 264

RQ300/1100 PA 327R (1) RQ 300/1100 PAV 15287 (3)

LS 264 Z

RQ 300/1100 PAV 13207 (3)

supersedes 10.83 company Daimler-Benz

engine: OM 407 h

132,4kW (180PS) (1 u. ') 154,5kW (210PS) (2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.75-2.95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	•	Spring pre-tensioning (torque-control valve) mm 6
1100 300	11,2-11,3 7,5-7,7		0,3(0,6) 0,3(0,5)		10,9 - 11,1 0,8 - 1,2	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ - 327R (1)

PRG check Control rod travel	Control red travel mmn	Test specifications (4) Control red travel	Control red travel rev/min	cifications Control rod	Control (3) travel min mm 12
- 500 13,8-14,6	500 14,0	10,2 1145-1160 4,0 1200-1230 1350 0 - 1,0	300	min.9,6 7,5-7,7 10= 2,0	-

Torque-control travel on flyweight assembly dimension a =

mm

1145-1160 min Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	2	Control rod stop	3	Fuel delivery characteristics			Starting fuel delivery Idle speed Control		
rev/min 1	cm³/-1000 strokes		rev/min 3		rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	rod franci cm ³ /1000 strokes/mm 7	
1100	90,0 - 92,0 (88,0 - 94,0)		500		•	-		100	135,0-155,0 (1 3 1,0 - 159,0)	

Checking values in brackets

7.85

Checking of slider	Full-load spee	•	Idle speed regulatio	Torque control	
Control rod travel rev/min mm 1	travel rud travel travel		rev/min 8 9 10		Control rod travel rev/mir mm 11 12
500 13,8-14,6	500 14	,0 11,7 1145-116 4,0 1200-12 1350 0 - 1,0	30 30	00 min.10,1 00 8,5-8,7 00- 430 =2,0	-

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At 1145-1160 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting fuel delivery		
rev/min 1	cm³/-1000 strokes 2	rev/min ,~ 3	rev/min cm³/-1000 strokes 5		rev/min 6	cm ³ /100 strokes 7	
1100	109,0 - 111,0 (107,0 - 113,0)	500	-	-	100	135,0 - 155,0 (131,0-159,0)	

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

..264 mit RQ..PAV 15287 (3)

Checkin	g of slider	gulation	ulation		tdle speed regulation				Torque control		
rev/min	Setting point Control rod Control		Control rad travel	Control red travel		Control rad travel		Test specifications Control rod travel rev/min 10		ev/min	Control rod travel mm 12
600	13,0-14,0	600	13,5	10,2 4,0	1145-1160 12 1 5-1245	300	7 , 5	300	min. 9,0 7,4-7,6 10=2,0mm		

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At 1145-1160 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	felivery on control lever mp. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting (Starting fuel delivery		
rev/min	crm ³ /-1000 strokes	rev/min 3	rev/min cm³/-1000 strokes 4 5		rev/min	cm ³ /100 strokes		
1100	90,0 - 92,0 (88,0 - 94,0)	500	-	-	100	135,0 - 155,0 (131,0-159,0)		

Checking values in brackets

En

WPP 001/4 DEE 7,6 a 3

1. Edition

PES 6 P 110 A 720 RS 361

RSV 600-1150 P 2/480

supersedes

engine

company

John Deere 6466 A

170,0 kW

Komb.-Nr. 9 400 231 076

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

mm (from BDC)

RW = 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm1/100 strokes 3	Difference cm ^{1/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0+0,1	16,3-16,5	0,4(0,75)			
600	5,4-5,6	2,2-2,8	0,4(0,75)			
	£1					
				J		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	9	rque control Control rod travel mm
loose	800 (x =	0,3-1,0	•	-	-	ca.25	600 600	5,0 5,4-5,6	950	11,9-12,1 12,0-12,4
ca. 46		1145-1155 1220-1250 0,3-1,7				·	730-790	=2,0	850	12,3-12,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat 3a Fuel delivery characteristics			Starting fuel delivery 5 4a Idle stop			
Test oil to	emp 40°C (104°F) cm*/1000 strokes	Note changed to) rev/min	rev/min	cm√1000 strokes 5	rev/min	cm71000 strokes 7	rev/min 8	Control rod travel mm
1100	162,5-164,5 (159,5-167,5)	1145-1155*	850	170,0-176,0 (168,0-178,0)	100	160,0-180 at contro 20,0-21,0 mm 55,0-65,0 (53,0-67,0	-rod	-

Checking values in brackets

* 1 mm less control rod travel than col 2

120

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11,6 i 7

3. Edition

PE 6 P 120 A 320 RS 372-1 Y Komb.-Nr. 0 401 846 473

RO 250/1100 PA 417 R

supersedes 5.85

company: DAF **DKX 1160** engine:

Values only apply to test nozzle-and-holder assembly 019 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,80-2,90 Port closing at prestroke (2,75-2,95) m

Port closing at prestroke

mm (from BDC)

TOTAL DESCRIPTION		(2,/5-2,95)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve) mm
850	11,4+0,1	18,4-18,6	0,5(0,90)			
250	6,5-6,7	1,4-2,0	0,8(1,2)			
Port closin	g diffe	rence = 0,9-1,0 21 mm	mm betw	een contr	ol-rod travel 9	mm and

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

on flyweight assembly dimension a =

Checkin PRG che	Control rod	Full-load : Setting po	oint Control	Test spec	cifications (4)	Idle spec	coint Control		cifications 5	Torque	Control rod
rev/min	travel mm	rev/min	red travel	red travel	rev/min	rev/min	rod travel	rev/min	travel mm	rev/min	travel mm
1	2	3	4	5	6	7	8	9	10	11	12
700	15,6-16,4	700	16,0	10,4 4,0 1350	1135-1150 1200-1230 max. 1,0		6,6	100 250 455-	min.7,4 6,5-6,7 495 = 2,0	850 1100	11,4-11,5 11,3-11,5
	ontrol travel		0		_			1135-	1150 min ⁻¹		1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F	Control rod stop	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed Control		
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min	cm ³ /1000 strokes/ mm	
LDA 850	0,7 bar 183,5-185,5 (180,5-188,5)	-	LDA 600	0, bar 135,5-137,5 (132,5-140,5)	100	315,0-355,0 (311,0-359,0) = 19,5 - 21,0 mm RW	

Checking values in brackets

11.85

rod travel

J21

D. Adjustment Test for Manifold Pressure Compensator DAF 11,6 i 7

- 2 -

Test at n -

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure - bar	Gauge pressure = bar	mm (1)
PE 6 PRS 372-1Y + RQPA 417 R	0,70	0 0,37 0,33	11,4-11,5 10,0-10,1 11,0-11,1 10,4-10,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 DAF 11.6 k 2 5. Edition

Εn

PE 6 P 120 A 320 RS 372-1 Y

RSV 250-1100 P5/458 R

supersedes 5 • 84 company DAF

Note VDT-I-420/114!

engine

DKX 1160 243 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

Komb.-Nr. 0 401 876 261

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2,75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Difference cm ^{-//} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm·/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,4+0,1	18,3-18,6	0,5 (0,9)			
250	6,4-6,6	1,1-1,5	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees		rated speed Control rod travel mm	rev/min	rque control Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
Toose	800	0,3-1,0	-	-	-	ca. 24	250	6,0	850 400	11,6-11,7 11,6-11,8
	X =	5,0					250	6,4-6,6	300	11,9-12,4
ca. 54	10,4 4,0 1425	1140-1150 1270-1300 0,3-1,7					670-730	y = 2,V		1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational- speed limitat		nel delivery naracteristics	Starting t	luel delivery 5			
Test oil to rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm //1000 strokes 5	rev/min	cm/1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 850	0,7 bar 183,5-185,5 (180,5-188,5)	1140-1150*	LDA 600	0 bar 135,5-137,5 (132,5-140,5)	100	315,0- 355,0 (311,0- 359,0) = 19,5- 21,0 mm RW	250	6,5	

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Checking values in brackets

^{* 1} mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator DAF 11,6 k 2

Testatn =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 372-1y +P5/458 R	0,37	0,70 0 0,30	11,0-11,1 11,4-11,5 10,0-10,1 10,3-10,7

Notes

(1) when n ~

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 11,1 q 7

5. Edition

PES 6 P 120 A 720 LS 388

RO 250/1100 PA 509

Komb.-Nrn. 0 402 046 208 = MAN-Nr. 2-7083 $0.402\ 046\ 209 = MAN-Nr.\ 2-7066$ supersedes 7.84 MAN

company: engine:

D 2566 MK/MKF 206 kW/2200 min-1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
(2,95-3,15)
3 00-3 10

mm (from BDC) (V). 6

		3.00-3.10		-3		
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,4+0,1	17.8-18.2	0,5(0,9)			
250	6,2-6,4	1,2-1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load s	•		cifications (4)	idle spec	_		cifications (5)	Torque o	
	Control rod travel		Control red travel rnm	Control rad travel mm	rev/min	rev/min 7	Control rod travel		Control rod travel mm	rev/min 11	Control rod (3) travel mm
600	19,2-20,8	600	20,0	9,2	1145-1160	250	6,3	100	min.7,8	100	10,2-10,3
VH :	ca. 49°			4,0 1400	1180-1210 0-1,0			1	6,2-6,4 90 =2,0	975 875	10,4-10,6 11,0-11,1
								330-3	90 -2,0	750	11,4-11,5
Torque-c	ontrol travel	·	0,4	5	<u> </u>		11	45-11	60 min-1	<u> </u>	1 mm less control

on flyweight assembly dimension a = Speed regulation: At C. Settings for Fuel Injection Pump with Fitted Governor

governor	felivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting t	fuel delivery
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	rod travel cm ³ /1000 strokes / mm
LDA 750	0,7 bar 178,0-182,0 (175,0-185,0)		LDA 650 LDA 500	0,7 bar 174,0-180,0 0,31 bar 134,0-140,0	100 250	215,0-235,0 12,0-18,0
LDA 1100	0,7 bar 163,0-169,0 (160,0-172,0)		LDA 500	0 bar 106,0-110,0	100-17	(80-190)

Checking values in brackets

(Col.4-5 inrease by \pm 3 cm³)

10.85

rod travel

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Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = ba	Gauge pressure = bar	mm (1)
PES 6 PLS 388 +RQPA 509	0,70	0,43 0,31 0	11,4-11,5 10,9-11,1 10,3-10,4 9,2-9,3

Notes

(1) when n

rev/min and gauge pressure =

bar (: maximum-full-load control rod travel)

-2-

40

WPP 001/4 DAF 11,6 v 3. Edition

En

PE6P110 A 320 RS 407-1

Komb.-Nr. 0 401 876 275

RSV 275-1000 P5/458-3

supersedes 7.84

company DAF

engine

DKCL 1160 155 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8 - 2,9 Port closing at prestroke (2,75- 2,95)

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel rmm 2	Fuel delivery cm/100 strakes 3	Oifference cm / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
600	12,3+0,1	13,9-14,2	0,4 (0,75)			
275	7,0-7,2	0,9 - 1,4	0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	1601	rque control Control rod travel mm
loose	800 x =	0,3-1,0 = 4,5	-	**	400	ca.23	275 275	6,6 /,0-7,2	600 1000	
ca.48	10,1 4,0 1325	1040-1050 1160-1190 0,3-1,7					675-73	5 = 2,0	750 850	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	Speed III			iel delivery naracteristics	Starting i	iuel delivery (5)	4a) Idle stop	
rev/min	emp 40°C (104°F) cm //1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm //1000 strokes	rev/min	cm /1000 strokes 7	rev/min	Control rod travel mm
LDA 600	0,7 bar 139,0-142,0 (136,5-144,5)	1040-1050*	LDA 1000 LDA 600	0,7 bar 114,5-119,5 (111,5-122,5) 0 bar 136,5-139,5 (133,5-142,5)	100 275	245,0-265 (241,0-269 9,0-14,0 (6,5-16,5	0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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rev/min decreasing pressure - in bar gauge pressure DAF 11,6 v Test at n = 600 diminution Control rod travel Measurement Setting Pump/governor (1) bar mm Gauge pressure = Gauge pressure = PE6P..RS 407-1 0,70 12,3-12,4 12,1-12,2 12,2-12,3 +PSV..P5/458-3 0 0,28

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum-full-load control rod travel)

-2-

K4

40

WPP 001/4 DAF 11,6 v 4

1. Edition

En

PE 6 P 110 A 320 RS 407-1 Komb.-Nr. 0 401 876 306 RSV 275-1100 P 5 A 508-6

supersedes

company DAF

engine DKTL 1160 185 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95)

mm (from BDC) RW = 9,0-12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm1/100 strokes	cm ¹ / 100 strokes	mm	cm ¹ /100 strokes	mm
1	2	3	4	2	3	6
85 0	12,3+0,1	14,1-14,3	0,4(0,75)			
275	7,0-7,2	1,0-1,5	0,45(0,75)			
			ļ			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe Degree of deflection of control lever	rated speed Control rod travel mm	f rev/min Control rod travel mm reখ/min 3	interme	diate rate	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	(3) To	rque control Control rod travel mm
oose	800 X = 3	0,3-0,7 ,25	-	-	-	ca.18	275 275 675 74	6,6 7,0-7,2 5 = 2,0	850 400 300	12,5-12,6 12,5-12,7 \$2,8-13,3
ca.47	11,3 4,0 1350	1135-1145 1275-1305 0,3-1,4					0/5-/4	J = 2,0	300	°2,0-13,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-load stop	6 Rotational- speed limitat	6 Rotational- speed limitat 3a Fuel delivery characteristics				4a Idle stop		
Test oil te	cm /1000 strokes	Note changed to) rev/min	rev/min	cm /1000 strokes	rev/min	cm ¹ /1000 strokes	rev/min	Control rod travel mm	
1	2	_	-	3	- 6	<u> </u>	-	3	
DA 850	0,7 bar 141,0-143,0	1135-1145*	LDA 600	0 bar 137,0-139,0	100	245,0-285, 241,0-289,		-	
	138,5-145,5)			(134,5-141,5)	275	10,0-15,0 7,5-17,5)			

Checking values in brackets

* 1 mm less control rod travel than col 2

11.85

BOSCH

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DAF 11,6 v 4

_ 2 _

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 407-1 + RSVP5 A 508-6	0,70	0 0,30 ·	12,3-12,4 12,0-12,1 12,1-12,2

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

KA

40 14 A A A A

WPP 001/4 MWM 14.4 a 1
2. Edition

En

PE 8 P 120 A 520/5 RS 427 RSUV 300-750 P 10 A 320 Komb.-Nr. 0 401 878 108 1-8-5-4-7-2-3-6 0-30-90-120-180-210-270-300 ° + 0,5 ° (+ 0,75 °)

supersedes 1.83 MWM company D 234-V 8 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75

75-2**.**95)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Oifference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm/100 strokes	Spring pre tensioning (torque-control valve) mm
750	9,7-9,8	15,9-16,1	0,5 (0,9)			
300	5,6-5,8	2,3-2,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower ev/min	rated speed Control rod travel mm	rev/min	rque control Control rad travel mm
loose ca. 55	800 x = 8,7 4,0 950	0,3-1,0 2,75 790-800 800-830 0,3-1,7	-	7	-	ca.21	300 300 320-38	6,1 6,5-6,7 0 = 2,0	750 450 320	9,7-9,8 9,7-9,8 10,9-11,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		rel delivery paracteristics	Starting l	irling fuel delivery 5 48 Idle stop		
rev/min	emp 40°C (104°F) cm //1000 strokes 2	Note changed to) rev/min	rev/min 4 ,	cm/1000 strokes 5	rev/min 6	cm //1000 strokes	rev/min 8	Control rad travel mm
750	159,0-161,0 (156,0-164,0)	790-800*	-	- :	•	•	•	-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

11.85

40

WPP 001/4 MAN 11,4a1 3. Edition

E

PES 6P 120A 320 LS 429 Komb.-Nr. 0 402 046 264

RQ 250/1100 PA 659

114 250/1100 111 003

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes10,83 company: MAN

engine D 2566 MKUL

235 kW/220 min⁻¹

estol4/50 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod	2,95-3,15) Fuel delivery	Difference	Control rod	Fuel delivery	Carina are territorias
· · · · · · · · · · · · · · · · · · ·	travel	, delicelly		travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
750	13,0+0,	21,5-21,7	0,5(0,9)			
250	6,3-6,	1,2-1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod travel	1	Full-load s Setting po rev/min 3	oint Control		rev/min	Idle spec Setting p rev/min 7	Control rad travel		cifications 5 Control rod travel mm	Torque of rev/min 11	Control rod (3)
600	19,2-2	20,8	3 600	20,0	10,3 4,0 1300			6,4	250	min. 7,9 6,3-6,5 375 = 2,0	1100	11,3-11,4 12,5-12,7
	ontrol travei ght assembly d	liman	Sion a =	0,55	·mm	Spe	ed regula		45-11	60 min-1		1 mm tess control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control fever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting f	
rev/min 1	cm ³ /-1000 strokes 2	rev/miri 3	rev/min	cm³/-1000 strokes	rev/min 6	Control red travel cm ³ /1000 strokes/mm
LDA 750	1,0 bar 215,0-217,0 (212,0-220,0)	-	LDA 500	0,29 bar 134,0-140,0 (131,0-143,0)	100	205,0 - 225,0 (201,0-229)
1100	177,0-183,0) (174,0-186,0)		LDA 500	0 bar 111,0-113,0	250	12,0-18,0 (9,0-21,0)
650	206,0-212,0 (203,0-215,0)			(108,0-116,0)		

Checking values in brackets

11.85

K8

BOSCH

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MAN 11,481

-2-

Test at n 500 rev/min decreasing pressure - in bar gauge pressure

Setting	Measurement	diminution Control rod fravel- difference
Gauge pressure - bar	Gauge pressure - bar	mm (1) .
1,0		13,0-13,1
	U	9,7-9,8
	0.29	10,7-10,8
	0,58	12,4-12,7
	Gauge pressure bar	Gauge pressure bar Gauge pressure bar

Notes

(1) when n

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

40

WPP 001/4 MB 9,5 a

6. Edition

PES 5 P 110 A 820 LS 434

RQ 300/1100 PA 327-3

supersedes 5.84

Komb.-Nr. 0 402 045 022

company: Daimler-Benz

1 - 3 - 5 - 4 - 2

je 72° ± 0,5° (± 0,75°)

engine: OM 409 141 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(7)

A 2 (1)

T

2.95-3.15

mm (from BDC)

Cv1. 5

	12	,33-3,13)			Cyle	
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,4+0,1	11,8-12,0	0,4(0,8)			
300 600	8,0-8,2	1,2-1,8 C, Sp. 4 u.5	0,4(0,7) 0,6(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	Full-load s Setting po rev/min 3	•	_	cifications (4) rev/min	Idle spec Setting p rev/min 7	coint Control red travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
600	13,8-14,6	600	14,2	10,5 4,0	1145-1160 1175-1205	300	7,1	300 8	in.10,8 ,0-8,2 15=2,0	ı	-

Torque-control travel on flyweight assembly dimension a =

m

1145-1160 min-1 Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil ten		Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f Idle spee	uel delivery d Gontrei
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	cm ³ /1000 strokes / mm 7
1100	118,0-120,0 (115,0-123,0)	-	600	100,0-104,0 (97,0-107,0)	100	130,0-150,0 (126,0-154,0)

Checking values in brackets

WPP 001/4 DAF 11,6 u

5. Edition

PE 6 P 110 A 720 RS 441 Komb.-Nr. 0 401 876 252

RSV 250-1200 P 5/493

supersedes 7.84 DAF

DHS 825 engine 184 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,8-2,9
Port closing at prestroke (2,75-2,95) mm

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm //100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm ¹ /100 strokes	mm 6
1000	12,2+0,1	13,7-14,0	0,4(0,75)			
250	5,0-5,2	0,7-1,2	0,45(0,75			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection	r raied speed Control rod travel		Intermed	rate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	1 3	rque control Control rod travel mm 1 f
lnose	800 X =	0,3-1,0 5,0	-	-	•	ca. 24	250 250	4,6 5,0-5,2	400 300	12,4-12,5 12,6-13,1
ca. 52	11,2 4,0 1500	1240-1250 1330-1360 0,3-1,7					525- 58	J=2,U		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	6 Rotational- speed limitat		rel delivery paracteristics	Starting fuel delivery 5 4a Ide			e stop
rev/min	cm/1000 strokes	changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
LDA 1000	0,7 bar 136,5-139,5 134,0-142,0)	1240-1250*	LDA 600	0 bar 91,5-94,5 (89,0-97,0)	100 250	245,0-285 (241,0-289 =19,5- 21,0 mm RW 7,0-12,0 (4,5-14,5	(0)	-

Checking values in brackets

1 mm less control rod travel than col 2



DAF 11,6 u

-?-

Testain =

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
الله والمساولة و	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
PE 6 PRS 441 + RSVP 5/493	0,70	0 0,36 0,27	12,2-12,3 10,1-10,2 11,7-11,8 10,8-11,2

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

40

WPP 001/4 DAF 11,6 u 7

1. Edition

En

PE 6 P 110 A 720 RS 441 Komb.-Nr. U 401 876 301

RSV 250-1200 P5 A 509

supersedes companyDAF engine DHS 825 184 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95)

mm (from BDG) RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm·/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1 000	12,2+0,1	13,7-13,9	0,4(0,75)			
250	5,0-5,2	0,7-1,2	0,45(0,75			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	r rated speed		Interme	Intermediate rated speed			Lower rated speed			3 Tarque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm 9	rev/min	Control rod travel mm		
loose	800 0	,3-0,7	-	-	-	ca.24	250	4,6	1000	12,4-12,5		
	X =	5,0					250 535-5	5,0-5,2 95 = 2,0	400 300	12,4-12,6 12,7-13,2		
ca.58	4,0	1240-1250 1330-1360 0,3-1,4					333-3	75 - 2,0		1297-1096		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat Sa Fuel delivery characteristics			Starting f	uel delivery 5	da Idle stop		
rev/min	cm /1000 strokes 2	changed to .) rev/min 3	rev/min 4	cm / 1000 strokes 5	rev/min 6	cm v1000 strokes 7	rev/min 8	travel mm 9	
LDA 1000	0,7 bar 137,0-139,0 134,5-141,5)	1240-1250*	LDA 600	0 bar 92,0-94,0 (89,5-96,5)	250	245,0-285, (241,0-289 7,0-12,0 (4,5-14,5)	.0)	-	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch. GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

DAF 11,6 u. 7

Testatn =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 441 + RSVP5 A 509	0,70	0 0,36 0,27	12,2-12,3 10,3-10,4 11,7-11,8 10,6-11,0

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

40

WPP 001/4 DAF 11,6 u 2 3. Edition

٤n

PE 6 P 110 A 720 RS 441-1

RSV 250-750 P 7/479-1

supersedes 7.84 company DAF

Komb.-Nr. 0 401 876 270

company DAF

engine DHS 825 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Seltings

Port closing at prestroke

2,8 - 2,9 (2,75-2,95)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm /100 s/irokes 3	Difference cm ¹ / 100 strokes	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
750 250	11,6+0,1 4,8-5,0	14,3-14,6 0,9-1,3	0,4(0,75) 0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of dettection of control	cer rated speed rev/min Control rod travel mm rev/min		Intermediate rated speed		Control- lever deflection	Lower	raled speed Control rod travel mm	3 To	rque control Control rod trável mm	
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
loose	800	0,3-1,0		-	-	ca. 18	250	4,9	•	-
	x =	4,0					250 250-29	4,8-5,0 0 = 2,0		
ca. 45	10,6 4,0 950	790-795 810-825 0,3-1,7				3	230-23	**		

The numbers denote the sequence of the tests idle-speed auxiliary spring at 2 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

s rev/min	Control roo
8	mm 9
-	-
	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung c. 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

K15

WPP 001/4 MB 11.4 L 3

5. Edition

PES 6 P 110 A 820 LS 442

ROV 300-1100 PA 594-3

supersedes .84 company: Daimler-Benz OM 407 162 kW (220 PS)

Komb.-Nr. 0 402 046 233

0 402 046 301

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	itroke	3,2-3,3 3,15-3,35) mm (from BDC) Cy1. 6;							
Rotational speed	Control red travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)			
1	2	cm³/100 atrokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6			
1100	10,9+0,1	11,3-11,5	0,4(0,8)						
300 600	8,0-8,2	1,4-2,0 C, Sp. 4 u.5	0,4(0,7) 0,6(0,9)						

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated a	psed		Intermediat	e rated sp	eed	Lower rated	speed		Curio	1000010001
deflection of control	rod travel	mm C	Degree of deflection of control lever	rev/min	Control rad travel	Degree of deflection of control lever	rev/min	Control rod travel	Silaing s	ileeve travel
1	2	3	4	5	6	7	8	9	10	11
max.	1140	15,2-17,	В -	-	-	ca. 32	100 300	min.9,7 8,0-8,2		1,0-1,3 3,9-4,2
ca. 60	9,9 4,0 1300	1140-115 1175-120 0-1,0	5			320-45				5,5-5,8 8,1
						39				

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten	elivery 1 stop np. 40°C (104°F) 2	intermediate speed	high idle s	very characteristics 5a	Starting Idle switching		Torque- travel	control 5
rev/min	cm³/1000 strokes .	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
<u> </u>	2	3	4	5	6	7	8	9
1100	113,0-115,0 (190,0-118,0		600	90,0-94,0 (87,0-97,0)	100	130,0-150,0 (126,0-154,0		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.85

40

WPP 001/4 DAF 8,3 o 3. Edition

En

PE 6 P 100 A 720 RS 447 Komb.-Nr. 0 401 876 260 RSV 250-1200 P5/493 P5A493 supersede 7.84

company DAF

162 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,2 - 3,3 Port closing at prestroke (3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm1/100 strokes 3	Difference cm ^{-/} 100 strokes	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,4+0,1	11,9-12,1	0,35(0,6)			
250	5,3-5,5	0,8-1,2	0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	deflection travel travel of control mm mm rev/min		Interme	Intermediate rated speed 4 5 6		Control- tever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To rev/min 10	rque control Control rod travel mm 1 t
loose	800 x =	0,3-1,0 5,0	-	-	•	ca.24	250 100	4,9 min. 7 ₂ 0	400 300	11,6-11,7 11,8-12,3
ca.58	10,4 4,0 1530	1240-1250 1325-1355 0,3-1,4						5,3 - 5,5		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b F	III-load stop	6 Rotational- speed timitat	speed limital Characteristics			uel delivery 5	4a Idle stop			
Test oil to rev/min 1	emp 40°C (104°F) cm //1000 strokes 2	changed to)		changed to)		cm1/1000 strokes	rev/min	cm/1000 strokes	rev/min B	Control rod travel mm
LDA 1000	0,7 bar 118,5-120,5 (116,5-122,5)	1240 - 1250*	LDA 600	0 bar 92,5-96,5 (90,0-99,0)	100 250	210,0-230 206,0-234 8,0-12,0 (5,5-14,5	0)	-		

Checking values in brackets

* 1 mm less control rod travel than col 2

11.85



DAF 8,3 o

- 2 -

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
PEGPRS447	0,32		11,1 - 11,2
+ RSVP5/493		0,70	11,4 - 11,5
		0	10,4 - 10,5
		0,23	10,5 - 10,9
		· ·	

Notes

(1) when n =

rev/min and gauge pressure =

bar (" maximum full-load control rod travel)

WPP 001/4 PEN 7,0 i 2

1. Edition

4

PE 6 P 110 A 320 RS 465

RSV 200-1200 P 1 A 305

supersedes.

Volvo-Penta company

TD 61 G 150,0 kW

Komb.-Nr. 0 401 876 313

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
Port closing at prestroke (2,95-3,15) mm

mm (from BDC)

; cyl. 1; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Oifference cm ¹ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ^{-/} /190 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,6+0,1	13,4-13,6	0,4 (0,75)			2,4-2,6 (2,2-2,9)
200	5,4-5,6	1,6-2,2	0,3 (0,6)			(2,2~2,9)
						,

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

1 Uppe	raled speed		Intermed	liate rated	speed	(4)	Lower	rated speed	3 Torque control		
Degree of deflection	Control rod travel	Control rod travel	ravel Control- lever		ĺ	Control rod travel		Control rod travel			
of control	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm	
1	2	3	4	5	6	7	8	9	10	11	
loose	800	0,3-0,7	-	-	-	ca.13	200	5,0	-	•	
	X =	4,3					200	5,4-5,6			
ca.55	11,6	1240-1250					280-34	0 = 2,0	İ		
2a	4,0	1270-1300									
	1440	40 0,3-1,4									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ulf-load stop emp 40°C (104°F)	Rotational- speed limitat		et delivery aracteristics	Starting f	uel delivery 5	48) idle stop	
rev/min	cm /1000 strokes	changed to) rev/min 3	rev/min	cm ¹ /1000 strokes	rev/min	cm/1000 strokes	rev/min 8	Control rod travel mm 9
700	134,0-136,0 (131,0-139,0)	-	-	-	1	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

KAS

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MAN 11.9 a 13

1. Edition

En

PES 6 P 120 A 720/3 LS 470-2 RQ 300/1100 PA 658-19 Komb.-Nr. 0 402 036 044 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes

company MAN

engine: D 2866 LFZ/330 243 kW/2200 min-1

MAN-Nr. 2-7712

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prest	roke	2,8-2,9 (2,75-2,95)	mm (from BDC)	Cy1. 6		
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,3+0,1	20,7-20,9	0,5(0,9)			
300	4,6-4,8	1,2-1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	Full-load Setting por	•	•	rev/min	Idle spec Setting p	coint Control red travel	Test spe		Torque (Control rod travel mm	3
600 VH =	19,2-20,8 max. 46°	600	20,0	9,5 4,0 1300	1145-1160 1175-1205 0 - 1,0		4,7	300	min. 6,2 4,6-4,8 80 = 2,0	1100 875	11,8-11 10,5-10 11,6-11	,6 ,8

Torque-control travel on flyweight assembly dimension a =

0,50_{mm}

1145-1160 min-1 Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics (3b)	Starting f	tuel delivery 6
rev/min	cm³/~1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min	rad travel cm³/1000 strokes:/ mm 7
LDA 750	1,0 bar 207,0-209,0 (204,0-212,0)	•	LDA 500	0,38 bar 184,0-196,0 (181,0-199,0)	100	225,0-245,0 (221,0-249,0)
1100 650	199,0-203,0 (196,0-206,0) 206,0-212,0		500	0 bar 132,0-134,0 (129,0-137,0)		
	(203,0-215,0)					

Checking values in brackets

12.85

BOSC

D. Adjustment Test for Manifold Pressure Compensator MAN 11,9 a 13 - 2 -

Test at n =

500 rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 5 PLS470-2 +RQPA 658-19	1,0	0 0,16 0,38	11,3-11,4 8,9-9,1 9,2-9,3 10,5-10,9

Notes

(1) when n =

rev/min and gauge pressure

bar (* maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

1. Edition

PES 6 P 80 A 720 LS 478 Komb.-Nr. 9 400 087 350

ROV 350/840-900 PA 726-1

supersedes -

company: Caterpillar

WPP 001/4 CAT 10.5 e

3306 T engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) RW = 9.0-12.0 mm Port closing at prestroke .60-1.80) Control rod travel Control rod travei Spring pre-tensioning (torque-control valve) Rotetional speed Fuel delivery Difference **Fuel delivery** cm³/ rev/min mm cm³/100 strokes 100 strokes mm cm3/100 strokes 880 0.25(0.4)14,1+0, 19,3-19,4 350 5.9-6.1 0.9-1.4 9.2(0.35)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	1	interm	ediate ra	ted spe	ed		Lower rated	speed	4		Stiding s	leeve travel
deflection	rev/min Control	"aver	Degre deflect of con	tion		Contro travel	l rod	Degree of deflection of control		Control r travel	od		0
lever	rod travel	rev/min	lever		v/min	mm	①	lever	rev/min	mm	(3)	rev/min	mm
1	2	3	4	5		6		7	8	9		10	11
max.	925	15,2-17,	2 -		-		-	ca.11	100	min.8	,0	350	0,5-1,5
ca.66	13,1	910-920							350	5,4-5	,6	500	2,4-2,6
	4,0	940-970	1						500	2,4-3	,6	750	
	1000	0-1,0	ļ	1					780-8	340 = 3	2,0	850	4,0-4,5
1				1								950	8,6
			-					3					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	elivery d stop np. 40°C (104°F) 2	limitation intermediate speed	high idle s	ery characteristics (5e)	Starting Idle switchir		Torque- travel	Control cod
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm³/1000 strebes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
880	193,0-194,0 (191,5-195,5)	910-920 *	500	182,5-184,5 (180,5-186,5		235,0-255,0 = 17,6-18,6 mm RW 5,4-5,6 mm RW	•	•

Chucking values in brackets

* 1 mm less control rod travel than col. 2

12.85

WPP 001/4 PEN 7,1 a

1. Edition

PE 6 P 110 A 320 RS 492 Komb.-Nr. 0 401 876 312 RSV 200-1200 P 1 A 305

supersedes Company Volvo-Penta TJD 71 G 165,0 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,0-3,10 (2.95-3.15)

mm (from BDC)

; cyl. 1; RW = 9,0-12,0 mm

Rotational speed rev/min 1	travel	Fuel delivery cm ¹ /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,1+0,1	12,5-12,7	0,4 (0,75)			2,4-2,6 (2,2-2,9)
200	5,4-5,6	1,6-2,2	0,3 (0,6)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	3 To rev/min 10	rque control Control rod travel mm
loose	800	0,3-0,7	*		-	ca.13	200	5,0	-	•
ca.55 2a		1240-1250 1270-1300 0,3-1,4					200 280-34	5,4-5,6 0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat		el delivery aracteristics	Starting fildle	uel delivery 5		e stop Control rod travel
rev/min	cm ¹ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm1/1000 strokes 7		mm 9
700	125,0-127,0 (122,0-130,0)	1240-1250*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2 10.85

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K23

40

WPP 001/4 PEN 7,1 b

1. Edition

En

PE 6 P 110 A 320 KS 492

RSV 650-750 P 4/421

Komb.-Nr. 0 401 876 315

supersedes company Volvo-Penta TJD 71 G engine 127.0 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDC)

; cyl. 1; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm 100 strokes	Spring pre tensioning (torque control valve) mm 6
700	12,6+0,1	13,4-13,6	0,4 (0,75)			2,4-2,6 (2,2-2,9)
650	4,9-5,1	1,6-2,0	0,3 (0,6)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	_	rated speed Control rod travet mm	1 2	rque control Control rod travel mm
1oose	800	0,3-1,0	-	-	-	ca.33	650	6,1	•	-
ca.39	11,6 4,0 930	750-755 775-785 0,3-1,7					650 660-70	6,0-6,2 0=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational speed limitat Note changed to)		et delivery aracteristics	Starting f	uel delivery 5	4a) Idio	Stop Control rod travel
rev/min	cm ¹ /1000 strokes	rev/min	rev/min	cm1/1000 strokes	rev/min	cm1/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	9
700	134,0-136,0 (131,0-139,0)	750-755*	-	•	~	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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Geschaftsbereich KH. Kunderidienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postlach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fedérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 SCA 8,0 d

6. Edition

PE 6 P 110 A 720 RS 3034

ROV 200-1200 PA 275 R

supersedes3.84 company Scania DS 804

Komb.-Nr. 0 401 846 709

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at pres	itroke	(3,25-3,45)	mm (from BDC)	RW = 9,0	- 12,0 mm	\ :
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	12,3+0,1	11,1-11,3	0,5(0,7)			2,5±0,1
225	5,9-6,1	1,5-1,9	0,2(0,4)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding	sleeve travel
deflection	rev/min Control rod travel	Control rod (1a	Degree of deflection of control		Control rod travel	Degree of deflection		Control rod travel	Silding	0
lever	mm	rev/min (2a	lever	rev/min	mm 4	of control lever	rev/min 8	mm (3	rev/min	
		45 6 45 6	 `	-	F			3	-	11
max.	1200	15,2-17,8	-	-	-	ca. 9	100	min.7,4		0,6-0,8
ca. 62	11,3	1240-1250				2	225	5,9-6,1	500 850	3,8-4,4 5,9-6,1
	4,0	1370-1400					410-4	70=2,0	200	8,4
	1500	0-1,0								
					Ì	38				·

Torque control travel a

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b firmitation intermediate speed	(3)		Starting Idle switchir		Torque- travei	control 5
rev/min	cm ⁹ /1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	trave! mm
1	2	3	4	5	:6	7	8	9
LDA 600	0,9 bar 111,0-113, (109,0-115,		LDA 1200	0,9 bar 118,5-123,5 (117,0-125,0		190,0-240,0 = 20,0-21,0 mm RW	٠	-
			LDA 500	0 bar 81,0-85,0 (79,0-87,0)				

1 mm less control rod travel than col. 2

SCA 8,0 d

-2-

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control red travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
PE 6 PRS 3034 + RQVPA 27 5 R	0,90	0 0,37 0,26	12,3-12,4 11,0-11,1 12,0-12,1 11,3-11,5

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-J-400/116
- For sealing, see VDT-J-400/117
- Test specifications approved by Scania on 6.4.1984
- Start of fuel delivery-engine: 18° v. OT
- Firing sequence, engine : 1-5-3-6-2-4

40

WPP 001/4 DEE 7,6 g 1

2. Edition

En

PES 6 P 110 A 720 RS 3083-1

Komb.-Nr. 9 400 231 084

RSV 400-1100 P 2/489

P 2A489

supersede 4.85
company John Deere
6466 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,45-3,55 (3,40-3,60)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ⁻ /100 strokes	cm ⁻ / 100 strokes	mm	cm/100 strokes	mm
1	2	3	4	2	3	6
1100	10,7+0,1	13,8-14,0	0,4(0,75)			
425	5,1-5,3	1,1-1,6	0,45(0,75)			
Port clos	ing mark cy	1. 1 : 13° aft	er port cl	sing		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	deflection travel iravel of control mm mm rey/min		Intermediate rated speed 4 5 6		Control- lever deflection in degrees 7	Control lever deflection rev/min Control rod travel			rque control Control rod travel mm .	
loose	800 x =	0,3-1,0	-	•	-	ca. 25		4,7 min.19,0	1100 700	10,7-10,8 11,9-12,2
ca. 49	9,7 4,0 1300	1155-1165 1200-1230 0,3-1,7					425 580 - 64	5,1-5,3 0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-foad stop		Speed infinial Characteristics			uel delivery 5	(4a) Idi	4a Idle stop		
Test oil to rev/min 1	cm ¹ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm41000 strokes	rev/min	Control root travel mm		
LDA 1100	0,9 bar 137,5-139,5 (134,5-142,5)	1155-1165*	LDA 700 LDA 500	0,9 bar 154,0-160,0 (151,0-163,0) 0 bar 103,0-109,0 (101,0-111,0)	100 1200	150,0-170 =20,0-21,0 mm RW 47,0-57,0		-		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KM. Kundendienst. Kfz-Ausrustung. < 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuftgart 1. Printed in the Federal Republic of Germany. Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

DEE 7,6 g 1

Testatn =

500

rev/min decreasing pressure – in bar gauge pressure increasing

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
res 6 P Rs 3083-	1 0,37		11,3 - 11,4
+ RSVP2/489 F2A489		0,20	10,1 - 10,5
		•	

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

40

WPP 001/4 STE 9,7 c

1. Edition

En

PE 6 P 110 A 721 RS 3102 Komb.-Nr. 0 401 866 700

RSV 250-1200 P 1 A 516

supersedes -

engine Steyr WD 615.84 191.0 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.75-2.95)

mm (from BDC)Cy1. 1

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ^{1/} 100 strokes 3	Cm ^{-y} 100 strokes	Control rod trävel mm 2	Fuel delivery cm/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	12,7+0,1	15,4-15,7	0,4 (0,75			
250	7,0-7,2	1,7-2,2	0,45(0,75			

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	11 9 1	rque control Control rod travel mm
loose	800	0,3-0,7	-	***	-	ca.22	250	6,6	-	-
	x =						250	7,0-7,2		
ca.66	11,7 4,0 1430	1240-1250 1310-1340 0,3-1,4					490-55	0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load slop	6 Rotational- speed limital 3a Fuel delivery characteristics			Starting f	uel delivery 5	4a Idle stop		
Test oil to rev/min 1	emp 49°C (104°F) cm1/1000 strokes 2	Note- changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min '6	cm ¹ /1000 strokes	rev/min B	Control rod travel mm	
LDA 1200	0,7 bar 154,0-157,0 (151,5-159,5)	1240-1250*	LDA 700	0,7 bar 150,0-154,0 (147,0-157,0)	100	190,0-220	,0 -	_	
			LDA 700	0 bar 102,0-105,0 (99,5-107,5)					

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

40.00

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rad travels difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 3102 + RSVP 1 A 516		0 0,47 0,30	12,7-12,8 10,2-10,3 12,1-12,2 10,6-10,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 PEN 10,0 f

2. Edition

RSV 200-1100 P 1/421-1

En

supersedes 7.85

company Volvo-Penta TID 100 K 225 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

PE 6 P 110 A 320 RS 3132

Komb.-Nr. 0 401 876 738

Port closing at prestroke

mm (from BDC) RW = 9.0-12.0 mm

	(5)	45-5,057	•			
Rotational speed rev/min	Control rod travel	Fuel delivery cm ¹ /100 strokes	Oifference cm ^{-y} 100 strokes	Control rod travel	Fuel delivery cm ^{-/} 100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
700	13,0+0,1	17,6-17,8	0,4 (0,75)			2,5 [±] 0,1
200	4,2-4,4	1,7-2,1	0,3 (0,6)	•		(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod		Interme	diate rated	speed	(4)		rated speed	(3) To	rque control
Degree of deflection of control lever	travet mm	travel mm rev/min				Control- lever deflection in degrees	rev/min	travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	200	ca. 20	250	3,8	-	-
	X =	4,0					250	4,2-4,4		
ca. 57	11,6 4,0 1340	1140-1150 1175-1205 0,3-1,7					245-305	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ult-load stop emp 40°C (104°F)	Rotational- speed limitat			Starting I	uel delivery 5	4a Idle stop	
rev/min	cm /1000 strokes	changed to) rev/min 3	rev/min 4	cm /1000 strokes *	sev/min	cm ^{-/} 1000 strokes 7	rev/min 8	Control rod travel mm 9
700	176,0-178,0 (173,0-18 1, 0)	1140-1150*	•	•	- 200	- 17,0-21,0 (14,5-23,5	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung 1980 by Robert Bosch GmbH. Postfach 50: 0:7000 Stuttgart t. Printed in the Federal Republic of Germany Panishlimus Féderale d'Alicmagne par Robert Bosch GmbH.

10.85

Testoil-ISO 4113

WPP 001/4 MB 18.3 c 1

1. Edition

PE 10 P 110 A 320 LS 3818-10

RO 300/1150 PA 437-4

supersedes

Komb.-Nr. 0 401 849 720

1- 9- 7- 6- 3 - 5 - 2 - 10- 9 - 4 0-27-72-99-144-171-216-243-288-315° $\stackrel{+}{=}$ 0,5° ($\stackrel{+}{=}$ 0,75°)

company:Daimler-Benz engine: OM 423

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4,0 - 4,1 (3,95-4,15)

mm (from BDC)

Cy1. 10

		10,00-4,107				
Rotational speed rev/min	Control rod travel mm 2	Fuol delivery cm ³ /100 stroke3 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,0+0,1	12,1-12,3	0,4(0,8)			
300	7,9-8,1	1,2-2,0	0,4(0,7)			
600 900	- Se	ct. C, Co1. 4-5	0,6(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RG check	Full-load speed re Setting point	gulation Test specifications (4)	Idle speed regula Setting point	ation Test specifications (5)	Torque control
Control rod travel mm	rev/min Control red travel mm 3	Control red travel mm rev/min 6	rev/min 6	Control rod travel mm 10	Control rod travel rev/min mm
600 13,0-14,0	600 13,5	10,0 1190-1205 4,0 1225-1255 1350 0-1,5		100 min.9,5 300 7,9-8,1 430-470 = 2,0	1150 11,0-11,1 600 11,5-11,7 900 11,4-11,6

on flyweight assembly dimension a =

0,45_{mm}

1190-1205 min

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil ten	elivery on ontrol lever np. 40°C (104°F)	Control rod stop	3 a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery 6
rev/min	cm³/-1000 strokes 2	rev/min 3		rev/min 4	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes/ mm 7
1150	121,0-123,0 (118,5-125,5)			600 900	107,0-111,0 (104,0-114,0) 115,0-120,0 (112,0-123,0)	100	140,0-160,0 (136,0-164,0)

Checking values in brackets

10.85

estoi-180

40

WPP 001/4 MB 18,3 d 3

1. Edition

PE 10 P 110 A 320 LS 3818-11 RQV 300-1150 PA 486-2

Komb.-Nr. 0 401 849 706

1-8-7-6-3-5-2-10-9-4

0-27-72-99-144-171-216-243-288-315° ± 0,5° (± 0,75°)

supersedes_

company: Daimler-Benz

engine: OM 423

261 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at pres	stroke	(3.95-4.15) mm (from BDC) Cy1. 10 RW = 9,0 - 12,0 mm							
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6			
1150	12,2+0,	12,6-12,8	0,4(0,8)						
300 600 900	8,5-8,7 - -	1,4-2,2 C, Sp. 4+5	0,4(0,7)						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Apper rated speed				rated sp	eed	Lower rated	speed	Sliding sleeve travel		
Degree of deliection of control lever	Control rod travel	Control rod travel mm rev/min	0	Degree of deffection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	mm 11
max.	1190	15,2-17	,8	**	-	-		100 300	min.10,2 8,5-8,7		1,6-1,8 5,8-6,2
ca. 52	11,2 4,0 1400	1190-120 1235-120 0-1,0	65					430-4			8,2-8,4
							3 a				

Torque control travel a = 0.5 mm

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np. 40°C (104°F) . 2	limitation intermediate speed	high idle s	very characteristics 5a poed 5b cm³/1000 strokes	idle switchin	0	Torque- travel	control 5 Control rod travel mm
1	2	3	4	5	6	7	8	9
1150	126,0-128,0 (123,5-130,5		900	110,0-114,0 (107,0-117,0 118,0-123,0 (115,0-126,0		140,0-160,0 (136,0-164,0	1150) 600 900	12,5+0,1

Checking values in brackets

• 1 mm less control rod travel than col. 2

BOSCH

Geschäftsbarsich KM. Kundendienst. Kfz-Ausrustung C by Robert Gesch GribH. D-7 Stuttgart 1. Poetlach 50 Printed in the Federal Republic of Germany

WPP 001/4 MB 18,3 e 3

1. Edition

PE 10 P 120 A 320 LS 3824-10 RQV 300-1150 PA 724-2 1-8-7-6-3-5-2-10-9-4 0-27-72-99-144-171-216-243-288-315°+0,5° (+0,75°)

supersedes -

company: Daimler-Benz OM 423 LA 368 kW

Values only apply to test nozzle-and-holder assembly Komb.-Nr. 0 401 849 719 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

4,0-4,1 Port closing at prestroke mm (from BDC) Cyl. 10 3,95-4,15 Rotational speed Control rod Fuel delivery Difference Control rod Spring pre-tensioning (torque-control valve) **Fuel delivery** cm³/ 100 strokes cm³/100 strokes rev/min mm mm cm³/100 atrokes mm 1150 11,7+0, 18,0 - 18,20,5 (0,8) 300 5,0-5,2 1.6 - 2.20.8(1.2)750 C. Sp. 4 u. 5 0.8 (1.2) 500

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection Control travel			Degree of Control rad deflection travel				Lower rated speed Degree of Control rod travel			Sliding sleeve travel			
of control lever	rod travel mm 2	mm rev/min 3	20	of control lever 4	rev/min 5	mm 6	•	of control lever 7	rev/min 8	mm 9	3	rev/min 10	mm 11
max.	1150	15,2-1	7,8	-	•	-48-		ca. 20	100	min.	6,3	300	1,0-1,2
ca. 54	10,7 4,0 1300	1190-1 1245-1 0 -						300-400 ③	300	4,8-5	5,0	700	4,0-4,5 5,3-5,8 7,4-7,8 10,0

Torque control travel a = -

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2) rev/min cm³/1000 strokes		Rotational-speed (2b) Fuel delivery characteristics (5 limitation intermediate speed rev/min cm³/1000 strokes		peed (50)	idle switchir		Torque- travei	Control 5 Control root travel
1	2	3	4	5	6	7	8	9
LDA 1150	0,7 bar 180,0-182,0 (177,0-185,0)	1190-1200 *	LDA 750 LDA 500	0,7 bar 184,0-188,0 (181,0-191,0 0 bar 138,0-140,0 (135,0-143,0		150,0-170,0 (146,0-174,0		-

Checking values in brackets

* 1 mm less control rod travel than col 2

9.85

BOSCH

leschäftsbereich KN: Kundendienst Kfz-Austrustung : by Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50: Printed in the Federal Republic of Germany ===rim4 an Rés;/bildue Fédersie d'Allemegre per Robert Bosch GmbH

- 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Masurement	Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE10PLS3824-10 + RQVPA 724	0,70	0 0,39 0,52	11,7 - 11,8 10,0 - 10,2 10,4 - 10,6 11,2 - 11,3

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

WPP 001/4 MAN 20,9 t

1. Edition

En

PE 12 P 120 A 520/4 LS 3828 RQV 250-1150 PA 668-7 supersedes - 1-5-9-8-3-4-11-10-2-6-7-12 company: MAN 0-15-60-75-120-135-180-195-240-255-300-315° $\stackrel{+}{=}$ 0,5° ($\stackrel{+}{=}$ 0,75°) engine: D 2842 LE Values only apply to test nozzle-and-holder assembly 560 kW

Values only apply to test nozzle-and-holder assembly 560 kW 1 688 901 019 and fuel-injection test tubing 1 680 750 067 Komb.-Nr. 0 401 840 725

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(4.15-4.35)	mm (from BDC)	Cy1.	12	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,0+0,1	20,0-20,2	0,5(0,9)			
250	6,9-7,1	1,7-2,3	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
deflection	Centrol	Control rod ta	Degree of deflection		Control red travel	Degree of deflection		Control rod travel		0
lever	rodtravel mm 2		of control lever 4	rev/min 5	mm 4	of control lever	rev/min	mm ③	rev/min	mm 11
max.	1150	15,2-17,8	-	-	-	ca. 12	100	min.8,5	350	2,0-2,5
ca. 66	10,9 4,0 1450	1190-1200 1320-1350 0-1,0					250 400-	6,9-7,1 460=2,0	900 1150	6,7-6,9 8,6
						39				

Torque control travel a = - mr

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten	stop	Rotational-speed 20 firmitation intermediate speed	Fuel delic high idle s	very characteristics 5a	Starting Idle switchin		Torque- travel	control 5 Control rod	
rev/min	crh ³ /1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm	
1	2	3	4	5	6	7	8	9	
1150	200,0-202,0 (197,0-205,0		1	•	100	190,0-210,0 (186,0-214,0		-	

Checking values in brackets

* 1 mm less control rod travel than col 2

9.85

BOSCH

Geschäftsbereich KM. Kundendienet. Kfz-Ausrustung C by Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany Imprime on République Féderale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 SCA 14,2 d 2

1. Edition

Stoil-ISO 4113

PE 8 P 120 A 920/4 LS 7008 X RQV 200-950 PA 547-6 Komb.-Nr. 0 402 648 815 1-2-7-3-4-5-6-8 je 45° + 0.5° (+ 0.75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

supersedes -

company: Saab-Scania engine: SSC 14 02

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
13,1+0,1	18,7 - 18,9	0,7 (1,0)			3,3 ⁺ 0,1 (3,0-3,5)
4,5-4,7	1,4 - 1,8	0,3 (0,6)			(5,0-5,5)
	mm 2 13,1+0,1	mm cm³/100 strokes 3 13,1+0,1 18,7 - 18,9	mm cm³/100 strokes 2 13,1+0,1 18,7 - 18,9 0,7 (1,0)	mm cm³/100 strokes 2 13,1+0,1 18,7 - 18,9 0,7 (1,0)	mm cm ³ /100 strokes 2 cm ³ /100 strokes 4 cm ³ /100 strokes 3 cm ³ /100 strokes 3

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated a Degree of deflection of control lever	rev/min Control rod travel	Gentrol rod travel mm rev/min 2a	Intermediate Degree of deflection of control lever	rated sports rav/min	Control rod travel	Lower rated Degree of deflection of control lever	speed Control travel rev/min mm 8		Sliding s	imm
max. ca. 60	990 12,1 4,0 1250	15,2-17,8 990-1000 1110-1140 0 - 1,0	-	-	-	ca. 10	100 min. 225 4,4-4 310-370 =	1,6	200 450	1,0-1,2 3,3-3,8 5,0-5,2 7,9

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full load d Co:,rei-ro Test oil ter	d stop	Rotational-speed 2b limitation intermediate speed	Fuel deli- high idle s	very characteristics 5a	Idie	fuel delivery 6	Torque- travel	control 5
rev/min	cm³/1000 strokes	revimin 49	rev/min	cm ² /1000 strokes	rev/min	cm³/1000 strokes	rev/min 8	travel mm
LDA 700	0,9 bar 187,0-189,0 (184,0-192,0	990-1000 *	LDA 950 LDA 500	0,9 bar 181,0-189,0 (179,0-191,0) 0 bar 156,0-160,0 (154,0-162,0)	225	250,0-300,0 =20,0-21,0 mm RW 4,4-4,6 mm RW	•	•

Checking values in brackets

" I mm fess control rod travel than col. 2

1.86

Bosch

leachEftsbereich KH. Kundendienst. Kfz-Auerustung 5 by Robert Sosch GmbH, D-7 Stuttgert 1, Postfoch 50 Printed in the Federal Republic of Germany medical in Republican Endless of Manages set School Stock (SmbM)

SCA 14,2 d 2

- 2 -

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE8PLS 7008 X +RQVPA 547-6	0,90	0 0,2 4	13,1 - 13,2 11,4 - 11,6 12,1 - 12,3

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-J-400/116
- For sealing, see VDT-J-400/117
- Test specifications approved by Scania on 3.5.1985
- Start of fuel delivery-engine: 22° v. OT
- Firing sequence, engine : 1-5-4-2-6-3-7-8
- ** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 70 2,9 3,1 nm.

WPP 001/4 SCA 14,0 g

1. Edition

supersedes

ROV 200-950 PA 736 PE 8 P 120 A 920/4 LS 7108 Komb.-Nr. 0 402 648 813 1-2-7-3-4-5-6-8 je 45° ± 0,5° (± 0,75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

company: Scania DSC 14 01

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at pres	troke	(4.45-4.65)	mm (from BDC)	: RW = 6	.0-8.0 mm	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	cm ³ /	Control rad travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	14,2+0,1	20,1-20,3	0,7 (1,0)			3,3 ± 0,1
225	4,6-4,8	1,4-1,8	0,3 (0,6)			(3,0 - 3,5)
	_	ence between co k. 1.65-2.35° c				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated a Degree of deflection of control lever 1	rev/min Control rod travel	mm \	Der def		ced Control travel mm	rod	Lower Degre deflect of con lever 7	e of tion tro!	speed rev/min 8	Control rot travel mm 9	d ③	١	mm
max. ca. 60	990 13,2 4,0 1250	15,2-17 990-10 1115-11 0-1,	00 45	-	•		ca.	10	225	min.5, 4,4-4, 370=2,0	6	420	0,6-0,8 3,1-3,3 4,8-5,0 7,4

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten rev/min	d stop np. 40°C (104°F) 2	Rotational-speed (2b) ilmitation intermediate speed rev/min (4a)	Fuel delin high idle s rev/min		idle switchli	no point	Torque- travel	Control od travel mm
LDA 700	0,9 bar 201,0-203,0 (198,0-206,0)	3 990-1000*	LDA 950 LDA 500	0,9 bar 194,0-202,0 (192,0-204,0 0 bar 156,0-160,0 (154,0-162,0		250,0-300,0 =20,0-21,0 inm RW	-	9

Checking values in brackets

* 1 mm less control rod travel than cot. 2

- 2 -

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rad travet- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 PLS 7108 + RQVPA 736	0,90	0 0,35 0,24	14,2-14,3 11,5-11,6 13,6-13,7 12,0-12,2

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-J-400/116
- For sealing, see VDT-J-400/117
- Test specifications approved by Scania on 3.5.1985
- Start of fuel delivery-engine: 22° v. OT
- Firing sequence, engine
- : 1-5-4-2-6-3-7-8

die

** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 70 2,9 - 3,1 mm.

estoil-ISO 4113

Test Specifications Fuel Injection Pumps (2) PP 001/4 MB 12,0 a and Governors

1. Edition

PES 6 P 120 A 720 LS 7114 RQ 300/950 PA 774 Komb.-Nr. 0 402 746 806

supersedes company:

Daimler-Benz

engine

OM 447 LA 350,0 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)Cy1.6; RW = 9,0-12,0 mm

Rotational speed rev/min		Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) n. 8
600 300	13,9+0,1 6,1-6,3		0,5(0,9) 0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider ck	Full-load : Setting po	•	•	cifications (4)	Idle spec	_		cifications (5)	Torque	control 3
rev/min 1	Control rod travel mm 2	rev/min 3	Control red travel mma	Central red travel rnrn 5	rev/min	rev/min 7	Control rod travel rvirn 8	rev/min 9	Control rod travel mm 10		Control rod travel mm 12
650 VH =	19,2-20,8 max. 46°	650	20,0	13,1 4,0 1150			6,2	300	min. 7,8 6,1-6,3 20=2,0	950 850	14,1-14,3 14,7-14,9
	ontrol travel	nsion a =		mm	Spe	eed regula	tion: At	945-9	60 min 1		1 mm less contro

Speed regulation: At on flyweight assembly dimension a = C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting t	
rev/min	cm ³ /-1900 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min	Control red travel cm ³ /1000 strokes / mm
LDA 600	0,85 bar 227,0-229,0 (224,0-232,0)	-	LDA 700	1,5 bar 243,0-247,0 240,0-250,0)	100	230,0-250,0 226,0-254,0)
LDA 950	1,5 bar 232,0-235,0 (229,0-238,0)		LDA 500	0 bar 135,0-137,0 (132,0-140,0)		

Checking values in brackets

1.86

Test at n -

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure - bar	Gauge pressure = bar	mm (1)
PES 6 PLS 7114 + RQPA 774	υ,85	0,25 0,50 0,98 1,10	13,9-14,1 10,6-10,8 12,7-12,9 13,6-13,8 13,2-13,4

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 STE 9,7 d

Fuel Injection Pumps 2 and Governors

1. Edition

PE 6 P 120 A 720 RS 7118 Komb.-Nr. 0 402 646 830

RO 300/1100 PA 784

supersedes.

company: Steyr

Values only apply to test nozzle-and-holder assembly

engine: WD 615,68

1 688 901 019 and fuel-injection test tubing 1 680 750 067

222 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(A 95-5 15)

mm (from BDC)

RW = 9.0 - 12.0 mm

		(4,30-0,10)				
Rotational speed / rev/min 1	Control-rod travel mm 2	Fuel delivery cm ³ /100 atrokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,7+0,	18,1-18,3	0,5(0,9)			3,3 ± 0,1
300	4,5-4,7	1,5-2,1	0,8(1,2)			(3,0 - 3,5)
** Due to s with a n	noothing ew delive	of the sealing ry-valve holder	edge, the must be	initial adjusted	spring tension to 2,9-3,1 mm	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod	1	*	Test spec Control red travel	cifications (4) rev/min 6	fdle spec Setting p rev/min 7	Control red travel		cifications 5 Control rod travel mm	rev/min	Control rod
600 VH =	15,6-16,4 ca. 46°	600	16,0	11,7 4,0 1300	1145-1160 1205-1235 0-1,0		4,6	100 300 360-	min.6,0 4,5-4,7 400 = 2,0	-	-

Torque-control travel on flyweight assembly dimension a =

0,30

Speed regulation: At

1145-1160 min-1

1 mm less control

C. Settings for Fuel injection Pump with Fitted Governor

	elivery on control teyer np. 40°C (104°F)	Control red stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d Contre
rev/min	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes/ mm
100	1,2 bar 181,0-183,0 (178,0-186,0)	-	LDA 700 LDA 700	1,2 bar 190,0-196,0 (187,0-199,0) 0 bar 143,0-145,0 (140,0-148,0)	100	225,0-265,0

Checking values in brackets

1.86

STE 9,7 d

- 2 -

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
PE 6 PRS 7118 + RQPA 784	1,20	0 0,57 0,36	12,7-12,8 10,3-10,4 12,1-12,2 10,8-11,0

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

_20

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 MB 11,7 c

1. Edition

RSV 350-1100 POA 518 PES 6 P 120 A 720 LS 7120 supersedes Daimler-Benz Komb.-Nr. 0 402 776 800 Values only apply to test nozzle-and-holder assembly OM 427 A 1 688 901 019 and fuel-injection test tubing 1 680 750 067 engine 206 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(5,15-5,35)

mm (from BDC)

RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1080	13,2+0,1	19,6-19,8	0,5 (0,9)			
350	5,5-5,7	1,4-2,0	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed Control roo travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,0	-	-	-	ca. 25	350	5,6		
	X = 3	,5					350	5,5-5,7		
23 .52	12,2 4,0 1350	1130-1140 1200-1230 0 - 1.7						**		

The numbers denote the sequence of the tests Set idle-speed auxiliary spring at 2 mm control-rod travel,

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop 6 Ro		6 Rotational- speed limitat	Rotational- speed limital 3a Fuel delivery characteristics			uel delivery 5	4a Idle stop		
Test oil to rev/min 1	emp 40°C (104°F) cm/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min 6	cm*/1000 strokes	rev/min B	Control rod travel mm 9	
LDA 1080	0,75 bar 196,0-198,0 (193,0-201,0)	1130-1140 *	LDA 750 LDA 500	0,75 bar 199,0-203,0 (196,0-206,0) 0 bar 143,0-145,0 (140,0-148,0)	100	170,0-190 (166,0-194		-	

Checking values in brackets

* 1 mm less control rod travel than cot 2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

ИВ 11,7 с

- 2 -

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 5 PLS 7120 +RSV POA 518	0	0,10 0,20	11,2-11,4 11,8-12,0 12,6-12,8

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 14,7 a 1

1. Edition

PE 8 P 120 A 320 LS 7801

RO 300/1050 PA 717

supersedes

company:

Komb.-Nr. 0 402 648 812 1-8-7-2-6-3-5-4 je 45 ° ± 0,5 ° (± 0,75 °)

Daimler-Benz OM 442 LA engine:

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067 320 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) CV1.8: RW = 9.0 - 12.0 mm

UNG	(0, 10-0,30)		Cy 1.0, 10	1 - 3,0 12,0	
Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
14,8+0,2	21,3-21,6	0,5(0,9)			
6,2-6,6	1,6-2,2	0,6(1,0)			
-	C, Sp. 4 u. 5	0,8(1,2)			
	Control rod travel	travel mm cm³/100 strokes 2 14,8+0,2 21,3-21,6 6,2-6,6 1,6-2,2	Control rod travel	Control rod travel mm cm³/100 strokes 2 14,8+0,2 21,3-21,6 Difference cm³/ 100 strokes 4 Difference cm³/ 100 strokes 2 0,5(0,9)	Control rod travel Fuel delivery Difference cm³/ 100 strokes Control rod travel Fuel delivery mm cm³/100 strokes mm cm³/100 strokes 2 3 cm³/100 strokes 14,8+0,2 21,3-21,6 0,5(0,9) 6,2-6,6 1,6-2,2 0,6(1/0)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	PRG che	Control rod travel			rev/min		Control rod travel	Test spe	cifications (5) Control rod travel mm	Torque o	Control rod (3) travel mm
	600 VH	19,2-20,8 = max. 46 °	600	20,0	1095-1110 1160-1190 0 - 1,5	300		300	min. 7,9 6,2-6,4 20 = 2,0		%5,5-15,7 15,9-16,1
Į	Torque-c	ontrol travel	<u> </u>	0,90	 <u> </u>	L	1	095-1	110 min ⁻¹		1 mm less control

Speed regulation: At

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	/2L\	Starting fuel delivery Idle speed		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min	cm ³ /1090 strokes/ mm 7	
LDA 600	0,68 bar 213,0-216,0 (210,0-219,0)	-	LDA 850	1,15 bar 244,0-248,0 (241,0-251,0)	100	200,0-220,0 (196,0-224,0)	
LDA 1050	1,15 bar 232,0-234,0 (229,0-237,0)		LDA 500	0 bar 145,0-147,0 (142,0-150,0)			

Checking values in brackets

Torque-control travel

on flyweight assembly dimension a =

1.86

rod travel

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gäuge pressure = bar	Gauge pressure = bar	mm (1)
PE8PLS 7801 +RQ PA 717	0,68	0,31 0,47 0,82 0,95 1,10	14,8-15,0 12,2-12,4 13,8-14,0 15,1-15,2 15,5-15,7 16,0-16,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)